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NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

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INDEX TO VOLUME XIII

With this issue is published the Index to Volume XIII of THE CHEMICAL AGE covering the period July—December, 1925.

Chemical Trade With India

SOME curious features relating to chemical imports into India are revealed in the Report on the Conditions and Prospects of British Trade in India, 1924-5, by Mr. Thomas M. Ainscough, H.M. Senior Trade Commissioner in India and Ceylon, just issued by the Department of Overseas Trade (H.M. Stationery Office, pp. 218, 5s. 6d.). The past three years show an advance in the value of imports of chemicals and chemical preparations from 2,02,00,000 to 2,10,00,000 Rs. The United Kingdom heads the list with a percentage of 65.8, and Germany comes second with 17.1.

The returns for dyeing and tanning substances show the United Kingdom in a most unfavourable position. The total import of alizarine, aniline, and other dyes was 2,56,00,000 Rs., a small advance on the previous two years, and the proportions from the exporting countries are shown below:—

	1922-23. Rs. (lakhs).	1923-24. Rs. (lakhs).	1924-25. Rs. (lakhs).
United Kingdom	20	27	8
Germany	1.84	1.81	1.91
Netherlands	14	18	23
Belgium	15	5	16
Switzerland	1	7	6
United States	10	11	9
Other countries	2	2	3

The position is even worse than these figures indicate for the Report states that the bulk of the imports from Belgium and Holland should be added to the German total, as they represent, in the main, dyes in transit from Germany. The position of British manufacturers is described as most disappointing. "The leading British firm, during 1920 and 1921, established a widespread organisation of depots staffed with guarantee brokers and salesmen in the principal markets of India. Large stocks were held and every effort was made to establish the British labels and qualities. Unfortunately, owing to the exceedingly low prices quoted by the German firms, who worked through a system of agents, the British marks have never become really established, with the result that our imports during the past few years have steadily declined, while the German houses have regained their dominant position." These remarks apply principally to aniline dyes, but German competition is very keen in alizarines also, as the following figures show:—

IMPORTS OF ALIZARINE DYES.

Countries of Consignment.	1921-22.	1922-23.	1923-24.
	Lb. (1,000)	Lb. (1,000)	Lb. (1,000)
United Kingdom	1,863	878	2,431
Germany	2,861	3,127	2,607
Holland	428	680	599
Total Imports (all sources).....	5,723	5,286	5,809

IMPORTS OF ANILINE DYES.

Countries of Consignment.	1921-22.	1922-23.	1923-24.
	Lb. (1,000)	Lb. (1,000)	Lb. (1,000)
United Kingdom	1,094	443	297
United States	723	692	819
Germany	2,989	6,726	8,531
Belgium	120	533	174
Holland	86	244	665
Switzerland	639	53	250
Total Imports.....	5,870	8,742	10,809

This position is, fortunately, compensated for by the extremely strong position of the United Kingdom in other branches. So far as household and laundry soaps are concerned British makers in the terms of the Report are *hors concours*, thanks to the excellence of their productions and their efficient selling organisation. In toilet soaps, in 1923-24, the United Kingdom supplied 79 per cent., the United States 11 per cent., Germany under 3 per cent., Austria 2 per cent., and trifling values came from Italy, France, and Japan. The American share of the trade in high-grade toilet soaps tends to grow on account of the activities and advertising propaganda carried on by such firms as the Colgate Co.

The trade in paints and painters' materials remains fairly constant. The United Kingdom here, again, is in a commanding position, both in the higher grades for use by railways, public bodies, and industry, and also in the cheap and meretricious bazaar varieties. American competition is growing in the better quality paints, such as those shipped by the Paraffin Paint Co.,

of San Francisco, while German colours are entering the bazaars in larger quantities. Goods returned as shipped from Antwerp and Rotterdam are usually German in origin. Genuine turpentine and turpentine substitutes are almost entirely supplied by the United Kingdom. In 1923-24 the United Kingdom shipped 86 per cent. of the varnish, the United States of America 9 per cent., and Germany most of the remainder.

As regards drugs and medicines Japan supplies practically the whole of the camphor imported, and China monopolises the cassia lignea trade. Quinine salts in 1923-24 were obtained as to 69 per cent. from the United Kingdom, 19 per cent. from Java, 4 per cent. from Germany, and 3 per cent. from the United States of America. The competition from Java was not quite so keen as in former years. In proprietary and patent medicines, the United Kingdom supplied 60 per cent. of the trade, the principal competitors being the United States, Germany, and France.

A Chance for Industrial Oxygen

RECENT work carried out in America by Mr. F. E. Vanderveer and Mr. S. W. Parr should help to focus attention once more on the enormous benefit that would accrue to certain well-established technical processes were it only possible to devise a method for producing industrial oxygen at a really low cost. The fact is that cheap oxygen has for long been a will-o'-the-wisp of the chemical engineer, and though reports have from time to time been received of processes that claim to have solved the problem they never seem to reach a stage of practical accomplishment. The final word on the subject is still, in fact, to be found in the thesis that was specially prepared, at the instigation of Sir Arthur Duckham, by Mr. Campbell Finlayson now nearly three years ago, and in which, after an exhaustive examination of all processes (including the promising method employing selective absorption through the medium of hæmoglobin), it was suggested that success had not really been achieved from the commercial standpoint. It is no idle prophecy to say that so far as Sir Arthur Duckham and some of the industrial processes with which he is associated are concerned, a supply of oxygen at a cost of a few pence per 1,000 cubic feet would lead to almost revolutionary developments in the field of fuel technology. In the first place, it would be followed by a renaissance in the gas industries, which would enable the efficiency of some of the gasmaking processes at present in operation to be augmented beyond all knowledge, and it would operate to the undoubted benefit of the community owing to the reduction in charges that would result.

The American workers quoted above have confined themselves to a close study of the chemical and thermal reactions that occur in the well-known water-gas process when more or less pure oxygen is utilised in lieu of air. A good deal of work on the same lines, notably by Hodsman and Cobb at Leeds University, has already been done in this country, but a fact of outstanding interest, which emerges from the later American research, is the statement in connection with the price at which oxygen must be produced if it is to compete on an equal economic basis with air. Messrs.

Vanderveer and Parr, as a result of comparatively large scale technical experiments, have calculated the optimum price at a shilling per 1,000 cubic feet, or, making allowances for the practical advantages that would accrue, they place the limiting price at two shillings per 1,000 feet. This conclusion is particularly interesting for the reason that opinion in this country has always rather leaned towards the view that, for the purpose in mind, it is essential to be able to procure oxygen at something under a shilling per 1,000 feet. There would, however, seem to be no reason to doubt the carefully considered views of the American workers, and if the limiting price of two shillings which they give, may be accepted, then it should inspire further effort on the part of those who have been in the forefront in the endeavour to solve the cheap oxygen problem.

Ethylene Glycol

THE indispensability of the technical chemist would seem to be asserting itself in the motoring industry and to be benefiting the motoring public to an extent that the latter most probably does not appreciate. Apart from the introduction and perfection of cracking processes, which have added enormously to the world resources of light spirits, and thereby assisted in controlling the price of petrol, there is to be placed to the credit of the chemist the discovery of tetraethyl lead and other anti-knock compounds, while more recently the problem has been resolved of providing an anti-freeze mixture for use in radiators. America, with her twenty million motor-cars, would, perhaps, be expected to take a lead in the development of ideas for greater comfort in motoring, and it is not surprising, therefore, that tetraethyl gas, and now ethylene glycol, have emanated from that country. There is, rather, cause for greater surprise that we over here have been so slow to follow America's lead. It is now stated that, as a result of extended research, ethylene glycol is being produced in large quantities in America by methods that will permit of indefinite expansion, once the value of the substance is appreciated and its remarkable properties are sufficiently understood to give rise to greater demand.

From the commercial standpoint, it may be said that ethylene glycol ($\text{CH}_2\text{OH}.\text{CH}_2\text{OH}$) is a new product; for, although it has been recognised for some seventy years, its industrial production has not been undertaken until recently. In structure and characteristics it resembles both ethyl alcohol and glycerol, occupying an intermediate position between the two; but perhaps its chief merit lies in its ready solubility in water in all proportions. It is not necessary here to discuss the details of the manufacture of this new product, but we note that in an American contemporary three chemists who have been closely associated with it draw attention to the apparent simplicity of the requirements in a case of this kind, and show how, in spite of a quarter of a century's work, they have not until now been successfully met. All problems, however, appear simple as they near solution; and in this case the successful combination in a single chemical compound of all those properties heretofore demanded registers another success to the credit of American chemists.

Chemical Survey of Coal Resources

AN important aspect of the work on fuel research undertaken by the Department of Scientific and Industrial Research is a survey and classification of the coal seams in the various mining districts by means of physical and chemical tests in the laboratory, supplemented where desirable by large scale tests at H.M. Fuel Research Station, East Greenwich, or elsewhere. The Fuel Research Board of the Department consider that the best way to carry out this work is by means of local committees representing the local colliery owners and managers, the local branch of the Institution of Mining Engineers, the Fuel Research Board, and the Geological Survey of Great Britain as well as outside scientific interests. Each committee is charged with the duty of supervising the work of the physical and chemical survey in a coal mining area; and in this way the survey becomes of practical value from the commencement, since local knowledge and experience are made available, and the seams to be investigated and the general programme of work are decided by those who are able to estimate most correctly the relative importance of the problems to be solved. The seams selected undergo physical and chemical examination by local investigators appointed for the purpose, after which a final selection is made of those seams likely to justify experiments on a technical scale in order to test their suitability for particular uses or methods of treatment.

Committees have for some time been actively at work in the Lancashire and Cheshire and in the South Yorkshire areas. The Department recently appointed a committee for work in North Staffordshire. A further committee has now been formed to deal with the survey of the coalfields of Scotland. The coal owners of Scotland and the Mining Institute of Scotland are co-operating in this work. In addition to six representatives of the owners, the committee will include Professor R. W. Dron (representing the Mining Institute of Scotland); Professor T. Gray, Mr. M. Macgregor (assistant director for Scotland, Geological Survey), Dr. C. H. Lander (Director of Fuel Research), and Mr. F. S. Sinnatt (superintendent of the Physical and Chemical Survey of the National Coal Resources).

A Tripartite Dye Combine?

IN an article on "England's Dye Industry," the official organ of the American Chemical Society, *Industrial and Engineering Chemistry* (news edition) refers to the possibility of an Anglo-German-American dyestuff combine, which has occurred to observers elsewhere. "Rumours," it states, "reach us that the British Dyestuffs Corporation and the I.G. would look with favour upon a tripartite arrangement, with America the third party. It is possible that some plan contemplating the inclusion of a part of the American industry is under consideration, but recent developments seem to divide the American producers into two distinct camps, and such an arrangement obviously would not include our most progressive makers. Thus gradually new commercial alliances are being perfected and the near future may show strange chemical bedfellows."

Book Received

REPORT ON THE ECONOMIC AND COMMERCIAL SITUATION OF AUSTRALIA TO JUNE, 1925. By R. W. Dalton, H.M. Senior Trade Commissioner in the Commonwealth of Australia. London: H.M. Stationery Office. Pp. 60. 2s.

The Calendar

Jan. 4	Institution of the Rubber Industry: "A Note on the Blending of Compounding Ingredients." T. R. Dawson. "Stress Strain Relationships of Rubber Under Compression." C. H. Birkett. "Low Temperature Vulcanisation." T. Thomas. 8 p.m.	Engineers' Club, Coventry Street, Piccadilly, London.
4	Society of Chemical Industry (London Section): "Coalescence." A. V. Slater. 8 p.m.	Burlington House, Piccadilly, London.
5	Royal Institution: Juvenile Christmas Lectures—"Old Trades and New Knowledge" (IV) "The Trade of the Dyer." Sir William Bragg. 3 p.m.	21, Albemarle Street, London.
5	Hull Chemical and Engineering Society: "Fuel Economy in Steam Plants." Arthur Grounds. 7.45 p.m.	Grey Street, Park Street, Hull.
5	Institute of Metals (Birmingham): "The Influence of Work and Annealing on Brass." Dr. O. F. Hudson. 7 p.m.	Chamber of Commerce, New Street, Birmingham.
6, 7	Optical Society and the Physical Society: Exhibition of Optical and Scientific Instruments.	Imperial College of Science and Technology, South Kensington, London.
7	Institute of Metals (London): "The Fatigue of Metals." J. Gough and Dr. D. Hanson. 7.30 p.m.	85 - 88, Minories, Tower Hill, London.
7	Society of Chemical Industry (Bristol Section): "The Contact Process for Sulphuric Acid." Stanley Robson. 7.30 p.m.	Chemical Dept., University, Bristol.
8	Chemical Engineering Group: "The Manufacture of Hydrogen for Industrial Purposes." A. Edgar Knowles and others.	London.
8	Society of Chemical Industry (Manchester Section): A Series of short Papers by F. M. Rowe, T. Porter Shenton, N. Simpkin and T. K. Walker. 7 p.m.	16, St. Mary's Parsonage, Manchester.
11	Institute of Metals (Scottish Section): "The Mechanical Properties of Non-Ferrous Metals and Alloys at High Temperatures." Professor F. C. Thompson. 7.30 p.m.	39, Elmbank Crescent, Glasgow.
11	Worshipful Company of Dyers: "Artificial Silk Dyeing." C. M. Whittaker. 6 p.m.	Dyers' Hall, Dowgate Hill, London.
11	Ceramic Society: "The Scientific Treatment of Feed Water for Boilers." W. B. Lewis. "Chemical Stoneware." W. Green.	Central School of Science, Stoke-on-Trent.
12	Society of Chemical Industry (South Wales Section): Discussion on "The Training of Chemists for Industry."	Technical College, Cathays Park, Cardiff.
12	Institution of Petroleum Technologists: "Edeleanu Process." Dr. L. Edeleanu.	Aldine House, Bedford Street, Strand, London.
14	Institution of the Rubber Industry (Manchester Section): "Steam and Its Control as Applied to Rubber Production Methods." H. C. Young.	Manchester.
14	Oil and Colour Chemists' Association: "Cellulose Nitrate Lacquers." A. E. Lain. "Leather Japanning." A. W. Lattey.	8, St. Martin's Place, Trafalgar Square, London.
15	Institute of Chemistry and Society of Chemical Industry (South Wales Sections): "Modern Resistance Glasses." E. E. Ayling.	Technical College, Swansea.

Chemical Trade Movements in 1925

By W. G. Wilson

In addition to the articles in last week's issue reviewing the events of the year 1925, we have now pleasure in publishing a comprehensive review of the chemical trade movements of the year by Mr. W. G. Wilson (of Chas. Page & Co.). With the general indications of improving trade in many of the staple industries, the writer's forecast for the coming year is distinctly favourable.

TRADE in the Chemical Industry during 1925 has continued to present many difficulties, particularly, of course, due to the lack of demand in the chief consuming industries and also to the paucity of export trade during a considerable part of the year. The better feeling which was manifest towards the end of 1924 did not unfortunately continue very long, and although during the first two or three months of this year there was a fairly good trade, during the period from April to August it could only be described as poor. In September, however, an improvement in the tone became evident and prices steadied all round. These stabilisations of prices, together with the generally-improved outlook in business, have led to a steadily increased demand, and it is noteworthy that consumers are now placing their orders for more normal quantities, instead of buying, as has been the case for so long, on a hand-to-mouth basis.

The Heavy Chemical industry in the main continues, with two or three notable exceptions, fairly satisfactory and English makers are progressing in their endeavours to regain lost markets.

Competition occasioned by depreciated currencies has, of course, not been so evident this year, but the violent fluctuations of the franc have militated very seriously against business with France.

As regards the Fine Chemical industry this is steadily improving, and a gratifying feature is that many English products now compete with those of foreign manufacturers, which allows them to compete in the world markets instead

of being restricted to this country under the protection of the Safeguarding Act.

Export trade has been extremely uncertain and for the best part of the year trade has been of small dimensions. The demand during the closing months of the year has shown a most welcome improvement, orders being placed for larger quantities and for reasonable periods ahead.

A minor and somewhat disquieting feature is that quite an amount of the re-export chemical trade which used to be handled in this country is now being placed direct with exporters abroad. Doubtless, however, the experience of our export merchants will enable this to be overcome in time, and this is very desirable, as English makers become more and more competitive, especially in fine products, with their competitors abroad.

One effect of the prolonged competition and selling at uneconomic rates occasioned thereby has been the formation of price conventions in quite a number of products, and up to the present these arrangements appear to be working satisfactorily and are beginning to have the effect of keeping the prices on an economic level and avoiding wasteful competition.

To sum up, with the general indications of improving trade in many of the staple industries, there appears to be no reason why trade in 1926 should not be of a much more even and brighter character than has been the case for the past few years, and these movements will be greatly helped by the fact that now we are down to economic prices in practically every product.

ACETONE.—This product has been in quietly steady demand through the whole year and there has been nothing like the same violent fluctuations in prices which were in evidence during the previous two to three years. In January the market was fairly firm at £80 per ton, and by slow degrees declined to round about £74 per ton in August. After this date an improvement began to be evident, and by slow degrees the market has firmed up until it stands to-day at £79 to £80 per ton, with a strong demand and likelihood of higher prices. For this country, of course, only acetone manufactured from lime acetate can be imported duty free, and so the fermentation material is being sold at somewhat lower rates on the Continent and in America.

ACIDS.—Business on the whole has only been of moderate proportions, but prices generally speaking have kept very steady and are now about as low as they can be expected to go.

Acetic.—The market at the opening of the year was very firm at £42 per ton for 80 per cent. technical, this figure had declined to £40 per ton by March, and the price was further reduced to £38 per ton in July. It stands firm at this figure to-day, and with a strong Convention controlling the product there is little likelihood of a further immediate fall.

Citric.—Demand for this article has been disappointing in the extreme. In January the market was standing at 1s. 4½d. per lb., and there was relatively little improvement in this price until about June, when the market was somewhat easier at 1s. 3½d. per lb. At the close of the year demand is extremely quiet and supplies can be obtained at 1s. 3d. per lb. There appears to be little prospect of an early improvement either in the demand or price.

Formic.—The market in this article has been relatively steady throughout the year. Business opened in January at about £52 per ton for 85 per cent. material, and thereafter declined until it was quoted at £49 per ton in April, and at this figure it continued comparatively steady until September, when the market declined further to £45 per ton. At the end of November, however, an improvement set in and we close with an extremely strong market at £48 per ton to £50 per ton and the material is in very brisk demand with supplies on the light side.

Oxalic.—Business in this acid has been none too good taking the year through and the price has ruled within narrow margins. In January supplies could be obtained at 4d. per lb. and by slow degrees, mainly under the influence of poor demand, the price has since further declined to 3½d. to 3½d., at which price supplies can be readily obtained. On the other hand, however, the feeling is now distinctly better, and it is thought by those best qualified to know that an advance is imminent. Quite a number of substantial contracts have been booked for next year's delivery.

Salicylic.—Only a moderately satisfactory business can be reported here taking the year through. Business opened at about 1s. 5d. per lb. for B.P. and declined by slow degrees in sympathy with phenol to 1s. 3½d. per lb. in August, and is now offered at 1s. 2½d. to 1s. 3d. per lb. with a slightly better tendency both in regard to price and demand.

Tartaric.—Generally speaking the demand has been only fair, although at the close of business the outlook appears to be much brighter. In January supplies could be obtained at 1s. 0½d. per lb., less the usual 5 per cent., and the quotation was round about 11½d. per lb. in May. This figure, however, declined down to 11½d. per lb., but the market has now slightly advanced and we close firm at 11½d., with the prospect of an advance very shortly.

ALUM.—Business in this product has been generally steady, and British makers have been in the main able successfully to hold their own. Price variations have been fairly narrow, and from £10 per ton in January supplies can be obtained to-day at £9 per ton. The outlook appears to be quite promising.

ALUMINA SULPHATE.—Keen competition has continued throughout the year in this article, and there appears to be little immediate likelihood of this competition being eliminated. At the start of business the price quoted for 17/18 per cent. was £6 10s. per ton, and this figure declined by slow degrees until by the middle of the year the material could be freely obtained at £6 per ton. We close the year with a somewhat better tendency with quotations standing round about £5 10s. for the 17/18 per cent. material and 14/15 per cent. in proportion. The outlook appears to be somewhat brighter and it is felt that at last prices have about reached the bottom.

AMMONIUM SALTS.—Trade on the whole has been fairly satisfactory, and British makers although experiencing fierce competition have been able in most cases to meet it. The demand both for home and for export has been on the whole satisfactory.

Carbonate has continued in fair request and competition has perhaps not been quite so severe; the market has been practically unchanged, and we close firm at £37 to £39 per ton for lump and powdered material.

Chloride.—Here competition has been more acute, and from a startling quotation of £27 per ton for fine white crystals in January the market declined by slow degrees to £23 per ton in September, and at this figure it has been fairly steady until the close of business; although to-day the price is by no means firm, demand on the whole has been satisfactory.

Phosphate.—There has been practically no variation whatever in the price during the period under review, and the English makers

have been well able to hold the trade. The average market price has ruled between £60 and £62 per ton, according to quantity and position, while the demand has been relatively fair.

ARSENIC.—This material has been probably the most unsatisfactory market product of all the materials upon which we are reporting. In January Cornish 99/100 per cent. was quoted at £37 per ton, and it has continuously declined with practically no business of any importance passing; only immediate supplies can be obtained at the present time at round about £14 10s. to £15 per ton. Recently, however, a few inquiries have been in evidence and producers are stiffening in their ideas. There is no doubt that once an improvement sets in an immediate sharp advance in price will be effected. One of the main causes of the depreciation in this product has been the entire lack of export demand.

BARIUM SALTS.—Trade has been quite satisfactory and, relatively speaking, brisk.

Chloride has been well called for throughout the year, although with increasing output on the part of some works the price has slowly declined, but this has not interfered with the demand. In January supplies were obtainable at £13 per ton, and by September this figure had declined to £8 10s. per ton. An improvement has since set in, and we close firm at £9 per ton with a further small advance not unlikely.

Nitrate.—Demand here has been only on the small side, and supplies have been mainly furnished by Continental producers. In January quotations were ranging at about £35 per ton, and have since declined by slow degrees until at present immediate supplies may be obtained at round about £30 per ton; at this figure, however, sellers are not at all inclined to commit themselves forward and an advance in price is thought to be not unlikely.

BLEACHING POWDER.—Considering all the circumstances, trade in this article can only be considered as satisfactory. The average price ruling throughout the year was £9 per ton, while for next year the price has been fixed by English makers at £8 10s. for contracts, with 10s. per ton advance for odd deliveries.

COPPER SULPHATE.—Competition has been extremely fierce for the business passing during the period under review. Continental producers have been able to undercut British makers in many cases; values, however, have not suffered to any extent, probably because the price has been low enough; it has averaged £23 per ton throughout the year, with Continental offering at slightly below this figure. Quite a substantial business has been booked for the season now starting, and the price continues firm with, if anything, an upward tendency.

CREAM OF TARTAR has been in extremely poor request until the latter months of the year. At the start of business in January supplies were obtainable at £81 per ton for 99 per cent., and this declined by slow degrees to £78 per ton in September, and can now be obtained at £76 per ton on the spot. It is stated that the outlook appears to be somewhat brighter, although this optimistic feeling has yet to be translated into active business. Price, however, can only be described as being distinctly on the low side.

EPSOM SALTS.—This material has been quite a satisfactory market throughout the year, and manufacturers have been well occupied with orders. Price also has been relatively steady and round about £5 per ton for technical material. On the other hand, export demand has been very poor.

FORMALDEHYDE.—For the main part of the year this has been a disappointing product; market opened very weak in January at £46 per ton, and in June it declined to £41 per ton. The fall in value continued with fierce competition between British and Continental makers until in early November the figure was forced down to as low as £35 10s. per ton; recovery has since set in and we close with a firm market with spot supplies held at £41 per ton, with a prospect of a further advance ere long.

IRON SULPHATE has been in steady demand throughout the year, with supplies frequently on the short side. Price has been very steady, and the average value has been round about £2 10s. to £3 per ton in barrels.

LEAD SALTS have been very active, and there has been a brisk demand throughout the year, with little variation in the value.

Acetate.—With very small exception practically the whole of the supplies have been furnished by Germany, and the market has varied up and down from £47 to £44 10s. for white and £41 to £43 for brown, at which figures we close with a very firm market to-day.

Nitrate.—Business in this product has been very regular and steady, and the price practically unchanged. The present value is £41 to £43 per ton, with an improved demand.

LITHOPONE.—Demand for this product has been fairly satisfactory and of late has much improved; from a starting value of £19 10s. per ton the market kept steady until about August when it slightly declined to £18 10s. per ton, but has since recovered and is now firm at £19 10s. per ton.

POTASSIUM PRODUCTS.—The demand for these salts has been fair with one or two exceptions and there have been no marked fluctuations in values.

Bichromate.—The consumption has been quite good for home trade, but export seems to have fallen off a little. At the start of the year makers' price was 5d. per lb. and this figure continued until the middle of October, when the makers announced a reduction to 4½d. per lb. with a discount of 5 per cent. for contracts.

Carbonate has again been a disappointing product; at the start of the year the material was quoted at £22 per ton on the basis of 80 per cent. and it has remained practically steady at this figure throughout the year; we close with the product being quoted slightly higher, and the demand appears to be improving slightly.

Caustic.—Business has improved gradually during the year and prices have not fluctuated to any material extent. In January supplies could be obtained at £29 per ton and by May the price had advanced to £30 per ton. It has remained round about this figure until the close of the year, but for larger quantities, say 10 tons lots, a reduction can be obtained. The demand appears to be steadily broadening.

Chloride has been uninteresting and the demand has been very small. From a starting value of £9 10s. per ton it has declined by slow degrees to to-day's figure of £8 per ton for 80 per cent. material.

Permanganate.—The demand for this product has been on the small side throughout the year, although business has been regular and the price has been without any violent fluctuation. In January the material was obtainable at 7½d. per lb. for B.P. quality and this firmed up slightly in August to 8d. per lb. Since then, however, a slight decline has set in, but we close with a firm market at 7½d. per lb. on the spot. The outlook appears to be quite hopeful in this product.

Prussiate has met with a very consistent demand and the price has, under the circumstances, continued on very level lines. In January the market opened at 7½d. per lb. and thereafter continued steady until May, when there was a decline to 7¼d. per lb., in the main due to small inquiry. This figure, however, declined to as low as 6¾d. per lb. in September, but since then business has considerably improved and with decreased production the market has advanced until it stands to-day a firm spot at 7½d. per lb. The outlook is distinctly promising and a further advance is not considered unlikely.

SODIUM PRODUCTS have been fairly well called for and prices with one or two exceptions have kept fairly steady; in fact, in a number of cases a further decline in price was economically impossible. Foreign competition has not been so acute as in recent years.

Acetate.—There has been a fair amount of variation in this article and throughout the year the market has been dominated by foreign competition. In January the material could be obtained at £22 per ton on an easy market and this declined by slow degrees to £18 per ton in September. There has been no appreciable change in the market position since that date, and as we close the demand appears, if anything, to be somewhat on the increase and the price a shade firmer.

Bicarbonate has continued very steady and the price is unchanged at £10 10s. per ton.

Bichromate business, generally speaking, is pretty well maintained, foreign competition has not been so active, and British makers have shown every determination to hold their markets. At the early part of the year the price was 4d. per lb. and this was subsequently reduced in October to 3½d. per lb. less 5 per cent. for contracts, at which figure a satisfactory business for forward is reported.

Bisulphite.—This article has been subject to a certain amount of foreign competition, while home production appears to be in excess of requirements; the market has continued relatively steady and from a starting value of £17 per ton the figure has declined by slow degrees to the present average figure of £16 per ton, at which figure only a moderate business can be reported; the immediate outlook is uncertain.

Chlorate has been an unsatisfactory trade, although latterly the price has tended to advance and the consumption to broaden. In the early part of the year it could be obtained at 2½d. per lb., but towards the end of the year this figure began to harden and the average market quotation can be taken to-day at 3d. per lb. with a firmer tendency.

Caustic has been quite active and from an opening value of £17 17s. 6d. per ton for 70/72 per cent. the present quotation can be taken at £16 12s. 6d. per ton. Some small quantities of foreign material have been imported but not sufficient to disturb the market.

Hyposulphite.—The British makers have continued to be able in the main to cope with the competition of foreign producers, especially for photographic quality. Prices have been more or less stationary throughout the year, and the average value to-day is £9 to £9 10s. for commercial and £14 to £15 per ton for photographic. At the close of business trade is fairly satisfactory, although a certain amount of competition is being experienced in the commercial product.

Nitrite.—The call for nitrite can only be described as being on the small side, but on the other hand prices show little variation.

From an opening figure of £23 10s. per ton by slow degrees the market has declined from £23 10s. to £22 per ton, and even at this figure consumers show disinclination to contract for forward delivery.

Phosphate.—Business has been pretty active in this article and prices show little variation; the average value has been £13 to £14 per ton according to quantity and position, but latterly there has been an increase in the demand, and makers are pretty well booked with orders and higher prices appear to be in prospect.

Prussiate has continued relatively steady during the period under review and a fairly satisfactory trade has been transacted. The demand from America has naturally fallen off greatly owing to the increased American production, but this has been off-set by the largely decreased Continental output. The market in January was standing at round about 4½d. per lb. and had declined in May to about 3½d. to 4d. per lb. At this figure the market became extremely steady and latterly has started to improve, and we close with a very steady market at 4½d. per lb.

Sulphide.—Competition in this product has been exceptionally severe during the year while the demand has been poor in the extreme; the market opened at £15 per ton for concentrated and £9 10s. per ton for crystals and has slowly declined since, and we close with the market somewhat firmer at £13 10s. for solid and £8 10s. to £9 per ton for crystals.

Sulphite.—There has been a fair demand during the year and works have enjoyed a steady output. There has been little variation in the price of this product; to-day's quotation is about £10 to £10 10s. for commercial and £15 to £16 per ton for photographic quality.

ZINC CHLORIDE has been fairly active and there has been little variation in price; to-day's value is £15 per ton for the liquid 102° Tw. and £22 to £23 per ton for solid.

ZINC SULPHATE has been steady throughout the year with practically no alterations in value. Supplies can be obtained to-day at from £13 to £14 per ton.

Registration of Chemists

To the Editor of THE CHEMICAL AGE.

SIR,—In your issue of December 19 you reported Dr. Levinstein as having raised this question at the Manchester Section of the Institute of Chemistry, and that he said "It carried with it an obligation to raise the standard of qualification and competence by excluding from the register those who did not possess proper professional qualifications. By doing that they would raise the status of the profession in the estimation of the public." Dr. Levinstein, and those who are asking for the registration of chemists, seem to forget the register of the Institute, which is a list of those who have proved that they have qualifications acceptable to the Council. An inspection of the papers set in September and of the results will convince anyone that the requirements are of no mean order. Do those who desire another register wish to comb the Institute through and so make a smaller select body, or to throw open the flood-gates to a more numerous crowd and then to close them, so that only a small trickle enters? No one has made this clear. The estimation of the public seems to trouble some, as the phrase has often come up. The great British public does not trouble itself much about chemists whose assistance it does not require to the same extent as that of the doctors; but the thinking class quite understands that membership of the Institute represents a high standard of qualification. The trouble arises from the services of the chemist only being required by a small portion of the great B.P., and not by the whole body politic.

In the same issue H. T. F. R., of the British Association of Chemists, also calls for registration. He says that "The Association views with great dislike the opinion that it is undesirable to make an attempt to make chemistry a close profession. Serious overcrowding is on the increase. A close profession is able to regulate this and by its restrictions can exclude those whose inferior qualifications tend, first, to threaten the economic safety of the whole body, and secondly, to bring its prestige into contempt." This looks like another hankering after the estimation of the B.P. In the issue of December 26 the same writer says, "Some form of registration is necessary, if the future of the profession is to be assured." I wish to point out that the whole body of chemists is on a very different footing from the whole body of medical men. The bulk of the latter are practising individually, and each depends for his livelihood upon many clients, of whom some are always dropping out, to be replaced by others. Now the bulk of chemists are not in this position. They are employed by education committees, public and semi-public bodies, commercial companies, and private individuals. From an inspection of the register of the Institute of Chemistry I do not think that ten per cent. of the members are in private practice. The great proportion of them are employed. While pressure can be brought upon public and semi-public bodies to appoint persons of certain qualifications, the commercial company or individual is quite free to do as it or he wishes. What is there to prevent the employer from preferring the "inferior qualification" which is not on the proposed register? It often happens that the "inferior qualification" is on the spot, is able to do what is required, and hence is selected. There is an unconscious flow of this material. It cannot be stopped. I believe that it is more formidable than is suspected. It will certainly prevent Chemistry from being

made a "close profession," and so far as commercial work is concerned it will always threaten "serious overcrowding."

And now I can agree with the attenuated doctrine that "some form of registration is necessary, if the future of the profession is to be assured." We have the existing register of the Institute. I ask anyone to look over it and the companion volume, *Official Chemical Appointments*, and notice the very responsible positions held by the fellows and associates. The result has been achieved by the steady policy of the Council without compulsion, and is a good answer to those detractors within our own fold who think that chemists have not got sufficient of the estimation of the public. It is the existing register which we should closely guard.—Yours etc.

December 29, 1925.

F. I. C.

The British Dyestuff Industry

To the Editor of THE CHEMICAL AGE.

SIR,—A favourite gag has been that German dyes are superior to British. This is untrue and constitutes a German propaganda for the recapture of this British-born industry. Since the next move in the same direction may be expected at any moment, we suggest serious consideration of the present situation. It has been stated in Parliament that since only 25 per cent. of the shares in B.D.C. can be held by the foreigner, control cannot be his. No greater fallacy could exist. Control may not depend on shares at all, but on monopoly. Think also of bank control, which is a thing quite apart from share capital, but real control nevertheless. Is it reasonable to believe that the German will wish to develop and finance British industry via the B.D.C.? Could he not have founded a dye concern of his own in this country, if such had been his object?

Consider the recent merge of interests in the I.G. The Griesheim concern employing no fewer than 10,275 workers with all the successful working plant which such implies is valued at £2,215,450. Compare this with the B.D.C. capital of over £9,000,000, now reduced to £4,775,000 . . .

We heartily commend the recent appointment of a scientific managing director of the B.D.C., but he is still only one, and business in the good old Micawber fashion is still able to cramp and kill. Negotiation cannot make dyes; it can only purchase them—at a price. One recent example will illustrate the effect of foreign combines. After selling below cost for some time the smaller makers were forced into the magnesium chloride combine, or went out of business. The price was then raised from £3 4s. per ton to £6 14s. per ton in one day. Why have a dye industry? While dyes are essential for textiles, only 1 per cent. to 2 per cent. is necessary. The value of the cloth is fifty to a hundred times the value of the dye required. Why jeopardise our textile industries? Dyes are also essential to paint, paper, ink, linoleum, and other trades. The manufacture of dyes comes under the heading of a key industry, because the plant and materials, while producing beautiful colours in times of peace, are essential for the production of explosives. What should we think if the Admiralty and War Office placed all their contracts with Krupps? Yet guns are useless without explosives, and equally so most textile goods without dyes.—Yours, etc.,

F. HULSE

(Director of F. Hulse and Co., Ltd.)

Woodlesford, near Leeds.

Effect of Humidity on Fabrics

Results of Practical Tests

THE third meeting of the session of the Society of Chemical Industry (Nottingham Section) was held jointly with the Chemical Engineering Group, on Wednesday, December 16, at Nottingham, when a paper entitled "Some Effects of Humidity on the Properties of Fabrics, with especial reference to the Control of Humidity during Strength Tests," was given by Messrs. R. G. Parker, F.I.C., and D. N. Jackman, M.Sc., of the British Launderers Research Association.

The authors pointed out that many important properties of textiles varied with the humidity and temperature of the atmosphere, with the exception perhaps of cotton and wool; detailed results from properly comparable experiments seemed to be lacking. The authors had attempted to obtain more data by comparing simultaneously a number of textiles over a selected range of atmospheric conditions. The experiments were confined to fabric rather than to fibre or yarn.

The observations on the weight of a textile fabric in equilibrium with any given atmosphere should apply equally to yarn and fibre—the property was not a function of the method of spinning or weaving, but pertained to the physical and chemical condition of the substance. The rate of attainment of equilibrium was a property of the fabric which would be modified by the close packing of the numbers of fibres in woven goods, while the strength was essentially a property of the fabric. At this point the authors described in some detail the "Constant Humidity Room" in which the experiments were conducted. The method of testing was by the Mullen Bursting Test, and the following advantages were claimed over other methods such as tensile tests upon strips or upon yarn, and ripping tests (a) greater uniformity of individual results; (b) smaller number of measurements required before taking the mean; (c) greater rapidity of testing; (d) need for less manipulative skill on the part of the observer. Results from eleven different fabrics were given in support of these claims.

The fabrics chosen for investigation were:—Cotton-woven and mercerised; linen; wool-woven flannel, natural finish, hosiery fabric, natural finish, and hosiery fabric, unshrinkable finish; silk-woven (Jap silk) knitted silk fabric; Rayon Celanese-woven fabric and hosiery fabric; viscose-hosiery fabric; all materials were given a preliminary treatment to remove dressing materials, if any. This treatment consisted of a soak for one hour at 60° C., in 1 per cent. acetic acid, thorough rinsing, followed by a wash in 0.3 per cent. sodium oleate. After thorough rinsing the fabrics were allowed to dry in the humidity room.

Results of Tests

Three sets of observations were made at relative humidities, 50, 60, 70 and 80 per cent., viz., (a) rate of absorption of moisture; (b) moisture content of the fabrics at equilibrium; (c) Mullen bursting strengths of fabrics. The results showed that wool, both ordinary and unshrinkable and viscose, gave almost identical curves for moisture content, thus at 70 per cent. R.H. the moisture content, as per cent. of dry weight, was about 12 per cent. in each case, cotton and linen were similar, having a corresponding value of about 7 per cent., whilst celanese was low, being only 6 per cent. at 70 per cent. R.H. In general, about two days was required for the fabric to attain equilibrium, but the initial absorption of moisture was very rapid, thus, for example, in a change of R.H. from 0 per cent. to 50 per cent. over 80 per cent. of the total possible moisture was taken up in one hour, whilst in a change from 60 per cent. to 70 per cent. R.H., 100 hours were required for a similar percentage to be taken up.

With regard to bursting strength, cotton, mercerised cotton and linen, all showed a slight increase in strength with rising humidity, all other fabrics suffered very considerable loss of strength. Thorough drying, of course, operated in the reverse direction. Thus a woven woollen fabric gave a bursting strength of 59 lb. after drying over P_2O_5 as compared with 50 lb. and 45 lb. at 50 and 70 per cent. R.H. respectively, whilst dry cotton fabric had a bursting strength of 68 lb. as compared with 79 lb. at 50 per cent. R.H.

The effects of various treatments were briefly considered and it was found that soaking in cold water or 0.3 per cent. soap solution caused no greater fall in strength than resulted immediately after wetting. A treatment for one hour at 60° C. with 1 per cent. sodium oleate solution had no more effect

than water on artificial silks, but Jap silk and wool were both weakened; a similar result occurred when boiled with 1 per cent. sodium carbonate solution. After rinsing and drying, viscose and Jap silk regained their original strength, but wool and celanese lost 20 per cent. and 7 per cent. respectively. Mere wetting caused viscose as much loss in strength as did many of the more drastic treatments.

A discussion followed, in which Professor Hinchley and others took part. The paper was well illustrated by numerous lantern slides.

Classifying Technical Information

Practice in the Rubber Industry

DR. S. S. PICKLES read a paper on "The Importance of an Adequate Intelligence Service for the Rubber Industry" before the Institution of the Rubber Industry recently, in which he said that the time was long past since it was possible for a man to keep in touch with developments in every branch of knowledge, and to-day it was becoming increasingly difficult to be familiar with all the publications dealing with even one branch of science. Chemistry, physics, and engineering were no longer simple subjects. Each had become subdivided into groups with highly specialised interests, and in place of a few publications the number of these was legion. Adequately to solve the problem, therefore, they must postulate not only a library containing all the books, pamphlets, and periodicals relating to rubber, but a trained staff capable of winnowing the wheat from the chaff. An organisation of this nature, to be efficient, must necessarily be expensive and beyond the means of an individual firm, and some form of co-operative effort must be relied on. The Research Associations established in connection with various industries as a result of the support of the Government had provided in many instances not only an excellent library but the technical organisation and staff requisite for abstracting, indexing, and publication work. That connected with the rubber industry had already gone a long way towards satisfying the needs of a library. The problem of indexing and cataloguing had been tackled, and a classified card index formed to render it possible at short notice to ascertain all that had been published in regard to any matter of interest. This card index already contained some 10,000 references, and was being added to at the rate of about 4,000 per annum.

Information Bureau

Steps had also been taken to extend the field of library work to the development of an Information Bureau. All relative scientific and technical journals were abstracted, and every month a classified summary of all items of interest was issued to members and subscribers. This publication represented the contents of over thirty periodicals, and during 1924 the abstracts numbered approximately 1,863 items, occupying 318 printed pages. These figures in themselves indicated the urgent problem with which they had to deal.

The Library of the Research Association issued periodical surveys of the literature relating to matters of special interest at the moment. These surveys had proved of great assistance to members who had no time or opportunity for searching literature.

Commercial Intelligence

The importance of commercial intelligence could not be over-emphasised, and the statistics and commercial reports relating to the rubber industry were scattered through numerous publications and these required collection, classification and dissemination in a readily assimilable form. That seemed to be a further field of useful work which might be exploited by an Information Bureau supported by co-operative effort. The influence of such a publication on the development of the industry could scarcely fail to be beneficial, and it was essential that both the technical and commercial sides of the rubber industry should be maintained in the highest degree of efficiency.

A "Scottish Dyes" Diary

SCOTTISH DYES, LTD., issue a very convenient pocket diary for 1926, a feature of which is the valuable technical information relating to the firm's well-known Caledon, Solway, Celatene, and Soledon colours, with fastness and identification tables, dyeing instructions, etc. The calendar proper is supplemented by a handy memorandum section, with space for more detailed notes than the calendar dates provide for.

Society of Glass Technology

Gift of £2,500 from Glass Research Association

THE two papers read and discussed at the meeting of the Society of Glass Technology at University College, London, on Wednesday, December 16, were both provided by the Department of Glass Technology at Sheffield. The first, entitled "The Composition of Glass Suitable for Use with Automatic Machines," by Professor W. E. S. Turner, D.Sc., gave him an opportunity of ranging over the whole field of glass compositions which had been used, particularly for glass bottles, from the time of the Roman glass makers down to the present day. The introduction of the automatic machine had very much limited the range of compositions available. For example, in using a number of types of machines, the percentage of lime in the glass could not be raised safely above 10 per cent., whereas in some of the glass used on the Continent and worked by hand the percentage had considerably exceeded 20 without causing excessive difficulty. Professor Turner then went on to indicate various compositions of glass which had been employed in recent times both in this country and in America, pointing out that the factors which decided the limits of composition were the size of the article, whether colourless or coloured, the method by which the machine was to be charged, that was to say, whether by suction or by gob feeding, and finally by the type of machine itself. Scientifically, the factors of importance were the viscosity of the glass, the rate at which the viscosity changed with temperature, the heat conductivity, and heat radiation.

Durability and Chemical Composition

In the second paper, entitled "The Relationship between the Durability and the Chemical Composition of Glass," by Miss V. Dimbleby, M.Sc., and Professor Turner, the account which was given by Miss Dimbleby was of work which had been proceeding at Sheffield for several years. Glasses were tested of similar type in which soda was replaced successively by lime, magnesia, alumina, titania, zirconia, barium oxide, and boric acid. In all, 70 to 80 individual glasses were prepared and the action of the four reagents, namely, boiling water, hydrochloric acid, sodium carbonate, and caustic soda solution were tested. The research probably represented the most thorough attempt which had been made up to now to discover the relationship between the durability and the chemical composition.

The ordinary meeting at which the papers were read was preceded by a special general meeting at which a gift of residual funds, amounting to about £2,500, was accepted by the Society from the Glass Research Association. The interest on this sum is to be devoted to the writing year by year of a report by some eminent authority on the progress of glass technology.

The Advance of Synthetic Paints

Sir Frank Heath's Warning to Australia

A GRAVE warning to Australia of the necessity for the development of research work in industry was given recently at Melbourne by Sir Frank Heath, secretary to the Department of Scientific and Industrial Research, and to the Advisory Council for Scientific and Industrial Research, who is now on a tour in Australia.

Sir Frank said that while in New South Wales he had inspected the White Train, which was a travelling exhibition of Australian manufactures. On that train were two exhibits that specially attracted his notice. One was of Australian-made pianos. He remarked that the cases were not French-polished, but had been finished in a new varnish that was being made in the United States. The foundation of this varnish was butyl alcohol, which was there derived from molasses. The varnish was remarkable for its beauty and high polish. The adjoining exhibit was one of Australian paints, and the connection was that he was convinced in his own mind that, within the next ten years, the paint industry, not only of Australia, but also of Britain and the rest of the world, was doomed to be swept away by the varnish and paints made from it that he had seen in the adjoining exhibit. Germany was making this butyl alcohol synthetically by a highly elaborate scientific process for which she held patents. It would be, he considered, impossible to carry out the process in Australia, and he was so sure of its superiority over every form of paint at present in use that they would all go down before it. The whole of this revolution had its genesis in

experiments in making "dope" for aeroplanes during the war. After recalling how the indigo industry of India went down before the synthetic article, Sir Frank Heath said that had the growers accepted the assistance of science there would still have remained a market for the higher grades. He then enlarged on the immense loss sustained by the silk industry by the production of the artificial goods.

Synthetic Wool

Sir Frank Heath said that synthetic wool was in actual course of production. There was already a sample in Sydney University. He would not claim for the artificial article that it possessed every quality of wool, but it was near enough to it to be a menace to the lower grades. It was incumbent that every nerve should be strained to improve the lower grades of wool so that they would be able to meet the competition when it came, as it assuredly would.

Chemically this synthetic wool is stated to be the same as artificial silk, for it is manufactured from artificial silk scraps or else directly from wood fibre or cellulose. In preparing artificial wool the fibres are short pieces from 2 in. to 6 in. in length, which are worked into yarn like sheep's wool. An Italian company are using the processes for its manufacture under a German patent, but the British company are producing the material in a different manner, and are unaffected by any foreign patent. The price—i.e., about 50 cents to \$1 a pound—in the United States is from a quarter to half the price of the real article.

Prosperity in American Chemical Industry

Impressions of a Recent Tour

MR. EDWARD J. SHORTT, director of the Old Strand Chemical and Trading Co., London, has been good enough to supply us with the following notes on conditions in the American chemical industry:—

"While, on my recent visit to the States, I was mainly concerned with fine chemicals and drugs, there were naturally opportunities for forming definite opinions on the chemical industry as a whole.

"At present there is an enviable atmosphere of prosperity and everyone is very busy and is spending freely. There is no unemployment worth speaking of, and certainly not in the chemical industry. Except for the anthracite dispute, which, when I was there, promised to be prolonged and bitter, trade disputes were almost unknown. Even this dispute was not without its advantages to Great Britain, for more coal was dispatched from Cardiff and other areas.

"Of course, the great impediments to British trade with the States are the prohibitive tariffs. Without these restrictions there would be enormous scope for British chemical manufacturers and merchants. In many cases, manufacturers cannot possibly meet the demands made upon them. Although this state will be affected by the rapid development of American chemical enterprise, for some time yet demand will greatly exceed the home supply. Even with the high tariff walls this condition provides scope for British exporters, and I found the greatest friendliness towards British chemicals. This feeling was borne out in all industry. A most striking feature was the prominence accorded in all trades to British goods. The Americans to-day can afford and are willing to pay for the very best quality goods and they like high-grade British lines with a reputation. Production costs are higher in the States and will probably continue so. I see a very good opportunity for British textiles, in spite of tariffs. Artificial silk was given much prominence.

"My interests were not concerned with dyes or heavy chemicals, but very considerable surprise was expressed at the sudden withdrawal of American support of the German potash loan. Although there was considerable reticence on the subject the general impression was that the action was unaccountable.

Opportunities for British Chemists

"The prospects for British chemists in America are undoubtedly bright. The continued expansion and the great financial resources have assisted a tendency to develop research in industry. Taxation has also been reduced. The chemist is being acknowledged as essential quite as quickly as in this country.

"The great concerns like Parke Davis and Co. told me that this business year had been the best since the war."

Chemical Societies and their Journals

Criticism at Liverpool Meeting

At a meeting of the Liverpool Section of the Society of Chemical Industry held at Liverpool on Friday, December 18, opportunity was taken to present the prizes awarded by the Society to the successful students of the Central Technical School.

Professor W. H. ROBERTS, who presided, said this was the first time the prizes had been given, and the money for them came from the surplus which they had after the annual meeting of the Society of Chemical Industry in Liverpool last year, this being due in a large measure to the extensive hospitality extended to the Society by the leading chemical firms.

The successful students were Mr. Harold Lewis, who won the senior prize of £7 with an average of 85 per cent. of marks in the higher examination for the national certificate in chemistry, and he had also passed the London Intermediate examination for B.Sc. The junior prize of £3 went to Mr. Eric Humphreys with 81 per cent. of marks in the ordinary examination for the National certificate in chemistry, and these prizes were handed to the winners by Mr. W. J. U. Woolcock.

Dr. ALFRED HOLT introduced the subject of "Chemical Journals and Chemical Societies," and having referred to the heavy financial strain put upon chemists through having to belong to so many Societies, he suggested the amalgamation of all the principal chemical organisations with one headquarters and one journal, the latter to be subdivided into original papers, abstracts, and technical matter, the main object being to reduce the quantity of matter published and the amount payable in subscriptions.

In the course of subsequent discussion Professor E. C. C. BALY said the Society lost money on every issue of its *Journal* at present, and he could not see how there would be any saving in cost if they divided it up into sections. If they could get another thousand members of the Society at the same subscription the *Journal* would pay well.

Various criticisms of the *Journal* were made, Mr. H. E. PORTS expressing the opinion that there was far too little in the nature of reviews. He considered the most valuable part of the *Journal* was the abstracts.

Mr. WOOLCOCK said everyone agreed that the subscriptions paid to scientific Societies were much too high, but they had to take into account the cost of printing and the overhead charges. He could not agree that by forming a new Society they would be able to save money; it would mean still one more Society. If they had one Society with the idea that thereby they were doing away with three, and they maintained three distinct branches of that one Society to deal with three different subjects as covered by the *Journal*, he was afraid from a financial point of view that whilst they said they only had one Society and a decreased number of subscriptions altogether, they would have that amount of money to spend, and that only. In its place they would have headquarters working a big Society, with branch secretaries and other officials, and that would mean expense.

Professor BANNISTER thought that with regard to the Institute of Chemistry something could be done in the way of saving expense. He thought the journals could be cut out of existence and a few members get information according to their views.

Responding to a hearty vote of thanks, Dr. Holt said he did not think the views he had laid before them could be carried out at once, but they were a line on which progress could be made.

On Saturday, December 19, a dinner, organised by the Liverpool Section of the Institute of Chemistry of Great Britain and Ireland, the Society of Chemical Industry, and the British Association of Chemists, was held at the Adelphi Hotel, Liverpool. Associate Professor W. H. Roberts, President of the Liverpool Section of the Society of Chemical Industry, was in the chair, and after expressing regret at the unavoidable absence of Lord Leverhulme and Sir Max Muspratt, he referred with pleasure to the presence of Lady Muspratt and Mr. Rudolph Muspratt. They had heard great things, he said, of Mr. Rudolph Muspratt, and they looked to him to carry on the great family traditions in chemical industry. There were speeches by Mr. W. J. U. Woolcock, Professor G. G. Henderson, and Mr. C. S. Garland. The company numbered 150, including many ladies, and the remainder of the evening was devoted to dancing.

British Industries Fair

First List of Chemical Exhibitors

THE British Industries Fair, which is to be held concurrently in London and Birmingham from February 15 to 26 next, has been aptly described as one of the Government's practical efforts to increase the trade of Great Britain.

In addition to advertising the Fair in newspapers and trade journals of practically every country of the world, the Department of Overseas Trade which is organising the London Section, is taking every possible step to secure the attendance of an unprecedented number of overseas and home buyers. It is interesting to note that since the inception of the Fair in 1915 the number of overseas buyers attending the Fair has increased each year until in 1924 there was an increase of 50 per cent. over the number in 1920. Already some 50,000 invitations to attend the Fair have been sent direct to overseas buyers and the number of acceptances is increasing daily. Buyers from South Africa, U.S.A., Holland, China, British West Indies, Italy, Finland, France, Syria, Czecho-Slovakia, Spain, Portugal, Hungary, Germany and Belgium have already intimated their intention of visiting the Fair. The Department is also receiving applications from all parts of the world for information as to the various classes of goods to be displayed, and general interest has been aroused both at home and abroad.

It is essential that the Fair should be supported both from a patriotic and business point of view, especially when it is realised that the Fair has not been foisted upon the community by the Government, but is being held at the special request of the majority of the British manufacturing firms who have exhibited in previous years.

That firms in the chemicals, drugs, etc., trades are appreciating the facilities and opportunities offered by the Fair is evident from the large number of applications received for space. Among those who have already booked space at the White City are:—Acme Chemical Co., Ltd., Albright and Wilson, Ltd., F. Allen and Son (Poplar), Ltd., Blyth and Platt, Ltd., A. Boake Roberts and Co., Ltd., British Drug Houses, Ltd., W. J. Bush and Co., Ltd., Cussons, Sons and Co., Ltd., Furmoto Chemical Co., Ltd., Gas Light and Coke Co., The General Kaputine Syndicate, Ltd., Graesser-Monsanto Chemical Works, Ltd., W. L. Hill, Hopkins and Williams, Ltd., Howards and Sons, Ltd., Johnson and Sons (Manufacturing Chemists), Ltd., May and Baker, Ltd., Thomas Morson and Son, Ltd., Otark Polish Co., Ltd., Payszu Soap Co., Ltd., R. W. Phillips, Ltd., Rambit Manufacturing Co., The Rodent and Insect Pest Destruction Co., Ltd., Samboy (Helena Jones), Ltd., Silks Toilet Co., South Metropolitan Gas Co., Smiths (Hampton), Ltd., Thomas Tyrer and Co., Ltd., Whiffin and Sons, Ltd., Williams (Hounslow), Ltd., J. G. Ingram and Sons, Ltd., Spencer Bros., J. Stevens and Son, Waverley Comb Co., Ltd., Packs, Ltd., Radio Co., Ltd., The Florogen Co., Ltd., Dunnips, Philli-Mirano, Ltd., Malehurst Barytes Co., Ltd.

French Government and Synthetic Ammonia

THE French Cabinet has approved a plan put forward by the Minister of Public Works for the transformation of the National Synthetic Ammonia Office, giving a more industrial form to the manufacture of the product. At present the Office is controlled by a council consisting of officials and manufacturers in equal numbers, but the Government bears the whole cost of the enterprise. It has seemed necessary to take another step in the direction of industrialisation by inviting private capital to participate in the organisation. This has led to the idea of forming a company in which the State will retain a large share of control.

Waste Oil Purification

THE subject of lubricating oils and pure petroleum base greases is treated in a new booklet by W. H. Willcox and Co., Ltd., 38, Southwark Street, London, S.E.1. There is also illustrated an automatic waste oil purifier which can be heated by exhaust steam or by electricity. No chemicals, cloths, or other filtering substances are necessary, as the action is based upon the relative difference in the specific weights of oil and water. The oil runs through a central tube, below the water, passes round the steam coil where it is warmed, and the purified oil passes up into a special chamber while the waste water is withdrawn at the base.

Attempted Sale of German Indigo Secrets

Alleged Arrangement with Manchester Firm

AN employee of the Gold und Silber Scheideanstalt of Frankfurt-on-the-Main, named Langenbach, has been sentenced to one year and nine months' imprisonment and to a fine of 2,000 marks (£100) for forgery, fraud, and unfair competition and for being in possession of arms. The accused was also charged with commercial espionage, according to the Frankfurt correspondent of *The Times*.

The Gold und Silber Scheideanstalt owns a number of secret processes for the manufacture of synthetic indigo and was in correspondence with the Höchst Farbenwerke on the subject. Langenbach succeeded in obtaining some of the recipes for these processes. In order to convert this valuable material into money, he appears to have got into touch with an American agent in Stuttgart, but his proposals were rejected. It was alleged that steps were taken by the accused man to persuade one of the leading companies in the English dyestuffs industry, in Manchester, to purchase his secrets and he hoped to receive 200,000 marks (£10,000) from the transaction. According to the prosecution he procured the address of this company from the British Consulate where the addresses of firms making indigo in England were given to him. He applied for a passport to England and admitted having travelled to Manchester at this company's expense. No sale, however, took place.

Langenbach's defence was that it was not a question of recipes, but of processes only, which he had learned of through the German technical papers. The police searched his dwelling and found some compromising documents, a passport, and an hotel account from Manchester. Copies of recipes were found on the accused at the police court. Langenbach declared that he did not show his recipes to anyone in England, but that he did not consider them as any longer secret, a chemist of the Höchst Farbenwerke having betrayed them abroad some time ago.

Chemicals in Angola

Good Prospects of Expanding Industries

THE province of Angola, the most extensive overseas possession of Portugal, is at present suffering from abnormal economic conditions consequent upon the issue of conflicting currencies and general disturbance in financial circles. The position, however, is now improving, according to a report recently published by the Department of Overseas Trade.

The natural resources of the country include oil palm, which industry is now receiving increasing attention. The concessionaire of Petroleo de Angola, in which most of the capital is British, holds a prospecting concession for oil covering all the country not embraced in the concession to the Companhia de Petroleo de Angola—a U.S. subsidiary concern—with the exception, roughly, of the territory south of latitude 16° south. This concession is due to expire in May, and it is doubtful whether it will be renewed. A Portuguese concern holds a concession for copper and precious metals covering the territory from the coast to longitude 14° east between latitude 14° and 16° south. Prospecting operations are in progress, but so far there has been little exploitation. The Companhia de Pesquisas Mineiras has pegged a claim for manganese and has been granted permission to work the deposit; similar claims for graphite and mica are not yet developed. At present authorities are prospecting for coal, and minor claims have been registered recently in respect of copper, sulphur, gold, etc., but not much importance is attached to them.

Roads, railways, and harbour extensions have been hampered by lack of funds, but a revival of an air service is under consideration, and a German aeroplane firm is placing an extensive scheme before the Government.

Exports include palm products and sugar, and expansion is anticipated in the trade of both these industries. Wax is a leading export, but the industry is purely native and is stationary. Castor seed exports have increased from 14 tons in 1913 to 1,441 tons, but rubber figures have declined remarkably. The United Kingdom market took palm kernels and oil, gum copal, wax, and sesame. There is a market for iron and steel, machinery, cement, and coal, but the United

Kingdom only contributes 8.5 per cent. against Germany's 17 per cent. British cement figures are dropping rapidly to the advantage of German imports. Local representation is essential for exporters, and three British firms of standing have branch offices in Loanda and Cabinda Enclave and are prepared to take up agencies.

Industries are still in their infancy and there should be great scope for development. Sugar, fish-curing, and palm oil extraction, lead, and the sugar industry are expanding. There is a modern factory for oil extraction and soap manufacture in course of erection at Loanda by the Companhia do Amboim, which concern is also erecting a sugar mill capable of turning out 10,000 tons a year. The Loanda match factory is nearing completion, and the company has a 20 years' concession for a minimum production of 60,000,000 boxes a year. Lime, and brick and tile industries are also found. A ten years' monopoly on cement manufacture has been obtained by a Portuguese firm with a minimum annual production of 5,000 tons, but the matter is at present in abeyance.

The general prospects are hopeful, and when the present financial difficulties are overcome it is probable that industries will expand rapidly and there will be much scope for British firms with adequate local representation.

Latest Government Contracts

THE following chemical contracts have recently been accepted by the various Government Departments:—

Admiralty

CIVIL ENGINEER-IN-CHIEF'S DEPARTMENT.—Portland Cement: The Cement Marketing Co., Ltd., London, S.W.

CONTRACT AND PURCHASE DEPARTMENT.—Chemicals: Brunner, Mond and Co., Ltd., Northwich, Cheshire; United Alkali Co., Ltd., London, E.C. Furnace, Annealing, Electric: Electric Furnace Co., London, S.W. Paint, Oxide of Iron: Golden Valley Ochre and Oxide Co., Ltd., Bristol. Plant, Dust Exhausting: Sturtevant Engineering Co., Ltd., London, E.C. Varnishes: Blundell Spence and Co., Ltd., Hull; Gross, Sherwood and Heald, Ltd., Barking; James Jackson and Co., London, S.E.; W. S. Jenkins and Co., London, N.W.; Jenson and Nicholson, Ltd., London, E.; Chas. Orme and Co., Ltd., London, E.C.; Paripan, Ltd., London, W.; John Smith and Son (Haltwhistle), Ltd., Haltwhistle; C. W. Waters, Ltd., London, E.C.; S. Wills and Co., Ltd., Bristol.

War Office

Paint, Prepared: Alexander Fergusson and Co., Ltd., Glasgow; Locke, Lancaster and W. W. and R. Johnson and Sons, Ltd., London, E. Water Cooler: Peter Brotherhood, Ltd., Peterborough. Zinc Ingot: H. Gardner and Co., Ltd., London, E.C.

Air Ministry

Cylinders, Oxygen, high pressure: Sir W. G. Armstrong Whitworth and Co., Ltd., Newcastle-on-Tyne. Dope, Cellulose Acetate: British Celanese, Ltd., London, S.W.; Titanine Emaillite, Ltd., London, W.; Cellon (Richmond), Ltd., Richmond. Oil, Mineral, Lubricating: Silvertown Lubricants Ltd., London, E. Oxygen Cylinders: British Mannesmann Tube Co., London, E.C.

Crown Agents for the Colonies

Candles: Price's Patent Candle Co., Ltd., London, E.C. Cement: T. Beynon and Co., London, E.C.; The Cement Marketing Co., Ltd., London, S.W. Gas Plant, etc., Mansfield: Baird and Tatlock, Ltd., London, E.C. Gelignite: Nobels Industries, Ltd., London, S.W. Magnes. Sulph.: W. Blythe and Co., Ltd., Church, Larics. Metal, White Ingot: The Phosphor Bronze Co., London, S.E. Oil, Engine: Vacuum Oil Co., Ltd., London, S.W. Oleum ricini: Hull Oil Manufacturing Co., Ltd., Stoneferry, Hull. Paint, Iron Preservative: The Vulcan Chemical Co., London, W.C. Paints: Wilkinson, Heywood and Clark, Ltd., London, W.C.; Torbay Paint Co., London, E.C.; Red Hand Composition Co., Ltd., London, E.C. Quinine: Howards and Sons, Ltd., Ilford, Essex. Quinine Bihydrochlor.: Burroughs Wellcome and Co., London, E.C. Cement and Asphalt: The Limmer and Trinidad Lake Asphalt Co., Ltd., London, S.W.

Chemical Matters in Parliament

Government and the B.D.C.

Sir B. Chadwick (House of Commons, December 17), in reply to Mr. J. Hudson, said that the Government undertook to make a grant in aid of research, amounting to £100,000, to British Dyes, Ltd., which was paid in March, 1920, to the British Dyestuffs Corporation, Ltd., into which British Dyes, Ltd., had been merged. The total amount paid or payable to the B.D.C. for commission on the sale of reparation dyestuffs to the end of October, 1925, was £81,800.

New Artificial Silk Companies

Sir B. Chadwick (House of Commons, December 21), in reply to Sir F. Sanderson, said that since July 1, 1925, some 46 silk or artificial silk companies had been registered in England and Wales, with a nominal capital approximating to £4,000,000. Information as to progress was not available in many cases, but three factories were under construction, and four existing factories, not previously used for silk manufacture, had been taken over.

Mr. A. M. Samuel, at the request of Mr. Duckworth, said that he would ask all consular authorities to report on the popularity or otherwise of British artificial silk.

Price of Basic Slag

Mr. Guinness (House of Commons, December 21), in reply to Mr. F. Mitchell, said that the reason why the supply of high-grade basic slag was now less than before the war was due in part to smaller steel production, but more to the fact that the "Bessemer" process, which originally resulted in a slag containing about 40 per cent. phosphate, had since the war been largely superseded by the "open hearth" process, which gave a slag containing only 10 per cent. to 35 per cent. phosphate. He could not hold out any prospect of the basic slag produced in this country improving in quality or of an increased supply of the higher-grade material. A Departmental Committee had been investigating processes for the enrichment of basic slags, but so far without material result.

Tests of Road-Surfacing Materials

Colonel Ashley (House of Commons, December 21), in reply to Mr. Clarry, said that the total cost of tests on road-surfacing materials carried out by the National Physical Laboratory during the last 12 months amounted to approximately £100. This was covered by fees charged. No experiments on concrete-surfaced roads had been carried out by the laboratory.

Foreign Sugar Beet Workers

Sir A. Steel-Maitland (House of Commons, December 21) said that the only information he had with regard to foreign sugar beet workers was the number of permits issued under the Aliens Order. During 1925 this number was 271, including 120 for erecting and operating machinery, 144 process workers, and seven other technical experts. Some had already returned home.

Tar and Cancer

Important Evidence at Inquest on Gas Worker

THE problem of epithelioma, or cancer through contact with tar and oily substances, came before the Manchester City Coroner (Mr. C. W. W. Surridge) on Wednesday. The case concerned the death of Robert Dalton Crowther (54), of Ancoats, employed at the Manchester Bradford Road gasworks.

In evidence, it was disclosed that a growth on the knee commenced in 1918. An operation was performed and he returned to work. During 1923 a further operation was carried out on a growth. A period of work followed, but eventually the deceased was compelled to take to his bed, and died of cancer.

An official of the gasworks department said Crowther had been employed at the Bradford gasworks since 1901. His duties largely consisted in pumping siphons of tar. It was the first case of epithelioma that had been brought to their notice. They had had one since. It was now a scheduled disease.

The Coroner: Is there not some protection you can use as regards clothing?

The Witness: We are investigating. Rubber gloves are useless, and overalls collect the deleterious matter.

Dr. Faith stated that tar played a prominent part in connection with cancer in that particular part of the body.

Dr. Henry: Do you think it advisable in scrotum cancer that there should be an early operation, or that periodical examination of the workpeople would be useful?

The Witness: I think periodical examination would be an advantage.

The Coroner said there was no doubt the man had died from a cancerous form of growth contracted during the course of his work, and he must return a verdict to that effect. Mr. Surridge understood that some system of periodical medical examination was under consideration. It would necessarily have to be of a voluntary character before legislation made it compulsory, and would require co-operation on the part of employers and willingness on the side of the workmen to submit to such an inspection.

The Nitrate Trade in 1925

Prospects for New Year

In their annual review of the nitrate trade, Aikman (London), Ltd., state that the year 1925 has established a record expansion in the consumption of nitrogenous fertilisers. The main increase in supplies has been provided by synthetic nitrogen products, the total world's production of which for the year is estimated at about 480,000 tons of nitrogen, against 410,000 tons for the previous year—an increase of 17 per cent. The production of by-product sulphate of ammonia is estimated at 270,000 tons of nitrogen, against 280,000 tons, a decrease of 3½ per cent., and the deliveries of Chilean nitrate for the year in terms of nitrogen amount to 377,000 tons, against 355,000 tons, an increase of 6½ per cent. Prices of both synthetic nitrogen products and by-product sulphate of ammonia have ruled consistently lower than nitrate of soda, so that the increased consumption of the latter product is remarkable.

What is required now is a changed method of selling, which would enable the Producers Association to vary their prices in those markets where financial conditions and the competition of other nitrogenous products makes it advisable to do so, and at the same time ensure nitrate distributors of as good a return on the capital they employ as they can obtain by selling other nitrogenous fertilisers.

During the coming year the productive capacity of Chilean nitrate is likely to be increased to 4,500,000 tons, and the individual percentage of sales may be somewhat reduced. The past year has been a profitable one to most producers, and the coming year is likely to be equally so for the large combinations. A reduction in the export duty is absolutely necessary if the Chilean industry is to share in the increasing demand for nitrogen.

Sulphate of Ammonia

The production of by-product sulphate of ammonia in all countries has recently shown a decrease owing to the depression in the iron and steel industries, and it appears probable that considerably smaller quantities will be available for sale in the spring months than was the case last year.

The synthetic production in Germany during the current year, June, 1925–May, 1926, which was estimated at 420,000 tons of nitrogen, against 360,000 tons for the previous year, now appears unlikely to exceed 380,000–400,000 tons. A large consumption credit has now been arranged by the Stickstoff Syndicate, in conjunction with a German bank, who, in turn, have been guaranteed against loss by the German Government to the extent of £1,000,000. This will enable consumers to obtain German synthetic nitrogen as they require it, and only necessitate payment on December 1, 1926. This may have far-reaching results in increasing consumption, and thus leave less nitrogen available for export.

The negotiations of the Stickstoff Syndicate in Norway for production of nitrate of lime are understood to have fallen through, so that the expected increase of production from this source will, at any rate, be delayed.

In other countries the total present productive capacity is estimated at 80,000–100,000 tons of nitrogen per annum, but new plants are under erection in the United Kingdom, Italy, France, Czechoslovakia, Poland, and the United States, which, when completed, are likely to increase the annual productive capacity by about 100,000 tons of nitrogen, although less than half of this increase is expected to be available during the year.

From Week to Week

THE CLOSING DOWN of the Chemical Institute of Berlin is reported. Funds are insufficient to keep it going.

MR. MATTHEW SHORT, foreman at the Tharsis Copper Co.'s works, Hebburn, was killed by a train at the level-crossing near the works last week.

AN AMERICAN OIL MERGER between the Standard Oil Co., of California, and the Pacific Oil Co. awaits ratification by shareholders. The assets of the two companies are \$450,000,000.

THE DYERS' COMPANY'S RESEARCH MEDAL for 1924-25 has been awarded to Dr. F. W. Rowe, F.I.C., for his work on the identification of azo colours on the fibre and of azo pigments in substance.

A NEW METHOD OF MANUFACTURING PAPER is reported to have been discovered by two German chemists. The wood pulp is poured into moulds much in the same way as iron is handled at the foundry, and it is stated a remarkably hard paper results.

LORD WEIR, chairman of the Anglo-Scottish Beet Sugar Corporation, speaking at Cupar on Tuesday, said that they had decided to call a new kind of sugar "Kingdom sugar." Work was actually started at the Cupar site and in eight months Fifeshire farmers would have the best equipped sugar factory in Europe.

PROFESSOR JAMES F. NORRIS, of the Massachusetts Institute of Technology, has been re-elected president of the American Chemical Society. Professor S. W. Parr (applied chemistry), of the University of Illinois, and Professor Wilder D. Bancroft (physical chemistry), of Cornell University, have been re-elected directors.

FIRMS INTERESTED IN EXPORT TRADE to Germany should know that Mr. J. W. F. Thelwall, H.M. Commercial Secretary at Berlin, will attend the Department of Overseas Trade from January 4 to January 9 to interview British manufacturers and merchants. Applications for interviews should be addressed to the Comptroller-General, D.O.T., 35, Old Queen Street, London, S.W.1, quoting reference 6044 T.G.

A MEETING of the Institution of Chemical Engineers will be held on January 13, in the Hall of the Chemical Society, Burlington House, Piccadilly, London, W.1, when the following papers will be read:—"A Critical Review of Published Experiments in Filtration," by A. J. V. Underwood, M.Sc.; "Tube Mill Grinding—with special reference to Grinding in a Current of Air," by Geoffrey Martin, D.Sc. Sir Frederic Nathan, K.B.E., will take the chair at 8 o'clock.

THE FINANCIAL STATEMENT issued by the Official Receiver in regard to Automatic Bottle Makers, Ltd., of Trafford Park, Manchester, shows that, as regards creditors, there are gross liabilities of £106,527, with an estimated deficiency of £45,230 and a total deficiency of £178,030. The chairman of the company attributes the failure to defective production, apparently caused by bad glass and unsatisfactory machines. An order for the compulsory winding up of the company was made in October last upon creditors' petition.

A NEW INSTITUTION has been formed to deal in a scientific manner with the problem of preparing and utilising fuel resources with greater efficiency. This organisation is the Institution of Fuel Economy Engineers, which was inaugurated at a meeting on Tuesday, December 22, in London. Among those present were Dr. T. Barratt, Professor Bacon, W. C. Goodchild, representing Sir Henry Fowler, Dr. R. Lessing, and Messrs. E. W. L. Nicol, J. Bruce, S. W. Bettoney, J. S. Gander, and A. C. Mahar. The secretary is Mr. H. L. Pirie, and the registered office of the institution is 29, Sherwin Road, Lenton, Nottingham, pending the opening of London headquarters.

FURTHER ARTIFICIAL SILK DEVELOPMENTS are reported. The British Enka Artificial Silk Co., Ltd., announce that they are not abandoning their Aintree proposition and that they expect to produce commercially there before the end of the year. A second large plant is to be erected in Canada where it is announced that English interests are securing a site at Drummondville, P.Q., and will manufacture cellulose acetate silk. An expenditure of \$10,000,000 is anticipated. Following on the news of the formation of the Glanzstoff-Courtaulds Co. comes the information that an agreement between Snia Viscosa and Courtaulds is expected. Snia Viscosa and Courtaulds are probably the world's two most successful artificial silk producers. The Snia concern claims over 10 per cent. of the world production. It is also reported that the Glanzstoff-Courtaulds agreement will provide for a selling monopoly of each firm's goods in the partner's country. Reports state that the Cologne Rottweil Group intends to erect an artificial silk factory in England to manufacture "Vistra" fibre. A sum of £1,000,000 has already been placed at its disposal by private English interests. It is announced that the artificial silk factory built by the Glanzstoff-Bemberg Group in Johnson City, in Tennessee, will be finished in June, and will take up production on a large scale at the end of the year.

WHEN REPAIRING A CAR with the engine running in a closed garage, George Howard, of Bradford, was found fatally gassed on Friday, December 25. Two assistants who were present for some time complained of sickness.

THE CLOSING of the Newark Sugar Factory is announced owing to the alleged failure of farmers to supply promised beet. The remaining crops will be transferred to the Cantley factory.—A well-known firm of sugar refiners have offered to establish a sugar factory at Lampeter if farmers will produce sufficient crops.

THE FUEL RESEARCH COMMITTEE appointed by the Department of Scientific and Industrial Research for Scotland includes Professor Thomas Gray, D.Sc., F.I.C., and (ex officio) Dr. C. H. Lander, director of Fuel Research, and Mr. F. S. Sinnatt, Superintendent of the Physical and Chemical Survey of the National Coal Resources.

REPORTS FROM CANADA state that an English syndicate has purchased the mica mine of Orser and Wilson, near Bancroft, Ontario, and will erect plant for handling and refining the product. The Aluminium Corporation, whose works in the Lake St. John district will require several thousand employees next spring, are, through subsidiary concerns, to manufacture fertilisers.

MR. J. B. S. HALDANE, Reader in Bio-chemistry at Cambridge University, and nephew of Lord Haldane, has been deprived of his office by the Sex Viri, or Council of Six of the University, following a recent divorce suit. Mr. Haldane is at present in Italy, but it is stated that an appeal has been lodged on his behalf, and will come before a tribunal of five appointed by the Senate.

THE U.S. LITIGATION in regard to the 4,500 German dye patents will, it is reported in Germany, not be of very much importance to the German chemical industry, as they are now mostly replaced by new improvements and discoveries, whatever the verdict may be. No commercial complications will, therefore, be connected with the case. The decision of the Supreme Court of America, however, will be of fundamental importance to Germany.

A PROTEST has been issued by the works and office staffs Advisory Committees of Lever Bros., Ltd., Port Sunlight, against the manner in which statements made in Parliament, and in a certain periodical have unfairly associated the name of Lever Brothers with the distressing accident which recently occurred during the construction of the new dock at Bromborough. It is pointed out that at the inquest on the youth who was killed, it was stated that it was quite clear that Lever Brothers, Ltd., were in no way responsible or concerned with the accident.

FIRE DAMAGE IS REPORTED from various quarters. Damages estimated at £20,000 were incurred at the premises of A. de St. Dalmas and Co., Ltd., manufacturing chemists, Leicester, on Thursday, December 24.—Part of the chemical factory of Pierson, Morrell and Co., Barnet, was destroyed on Wednesday, December 23, but the main store was saved.—Drugs worth about £7,000 were stated to have been saved from a fire in West Street, Brighton, on Wednesday, December 23.—The works of W. H. Keys, Ltd., tar distillers and refiners, etc., West Bromwich, suffered from one of the largest local fires for some time. Stocks of tar were involved.—An explosion occurred when James Dibble was dismantling an old acetylene gasholder at Little Aston Hale, near Walsall, on Thursday, December 24. He was blown through the roof and killed. It was suggested at the inquest that a spark from a sledge hammer might have caused the explosion.

UNIVERSITY NEWS includes the following announcements:—*Oxford*.—The degree of Ph.D. has been conferred on S. Z. Hasan, New College, and T. S. Stevens and R. L. Vollum, Lincoln. *Cornell, New York*.—An anonymous gift of \$250,000 has been received, the income to be used for the benefit and advancement of teaching and research in chemistry. This gift enables Professor Dennis, head of the Chemistry Department, to carry out his scheme of inviting prominent scientists to lecture at Cornell and to place a laboratory at their disposal for instruction purposes. The first holder of the lectureship will be Professor Ernest Cohen, Professor of Physical and Inorganic Chemistry at the van't Hoff laboratory, Utrecht University, Holland. He will be at Cornell from February 1 to June 1, 1926. *Leeds*.—Mr. J. N. Williamson, Ph.D., has been appointed assistant lecturer in mining and Mr. F. J. Garrick has been appointed demonstrator in Inorganic Chemistry. *St. Andrews*.—The late Mrs. R. Mitchell has bequeathed the sum of £2,000 for the institution of scholarships, the Carnegie Trust has promised £20,000, and Lord Inchcape has given £5,000. The following degrees have been awarded:—*Cambridge*.—D.Sc., H. S. Jones, Ph.D., S. A. Asdell, M.Sc., R. L. Aston. *Leeds*.—D.Sc., D. Burton and H. S. Houldsworth; M.Sc., F. R. Curtis; Ph.D., B. S. Platt. *Durham*.—M.Sc., J. J. Inkster, J. Nichols, W. Stephenson; Ph.D., L. A. Sayce, J. Taylor, W. Maw.

Obituary

MR. FRANCIS ALBRIGHT STURGE, of Wrexham, aged 80, son of Mr. Edmund Sturge, who founded the chemical works in Wheelley's Lane, Birmingham, now owned by John E. Sturge, Ltd., chemical manufacturers.

References to Current Literature

British

- COKE.**—The combustibility and reactivity of coke in the blast furnace. S. L. B. Etherton. *Gas World*, December 5, 1925, pp. 14-18.
- DYESTUFFS.**—A modern British dye factory. *J.S.C.I.*, December 18, 1925, pp. 1218-1225.
- The dyehouse laboratory. Some notes on dyestuff selection and fastness data. J. Ferguson. *Ind. Chem.*, December, 1925, pp. 518-520.
- LIGHTING GAS.**—Notes on purification. T. R. Cook. *Gas World*, December 12, 1925, pp. 538-542.
- ORGANO ARSENIC COMPOUNDS.**—Trypanocidal action and chemical constitution. Part III. Arsinic acids containing the glyoxaline nucleus. I. E. Balaban and H. King. *Chem. Soc. Trans.*, November, 1925, pp. 2701-2714.
- PHOSGENE.**—The manufacture and uses of phosgene. G. M. Dyson. *Ind. Chem.*, December, 1925, pp. 537-541.
- REACTIONS.**—Mechanism of the formation of triphenylguanidine and phenylthiocarbimide from thiocarbonyl. S. J. C. Snedker. *J.S.C.I.*, December 18, 1925, pp. 547-548 T.
- The action of phosphoric acid on certain terpenes and related compounds. P. G. Carter, H. G. Smith and J. Read. *J.S.C.I.*, December 18, 1925, pp. 543-547 T.
- The action of nitrous acid upon amides and other "amino" compounds. R. H. A. Plimmer. *Chem. Soc. Trans.*, November, 1925, pp. 2651-2659.
- SOLUBILITY.**—Solubility influences. Part I. The effect of some salts, sugars, and temperature on the solubility of ethyl acetate in water. S. Glasstone and A. Pound. *Chem. Soc. Trans.*, November, 1925, pp. 2660-2667.
- STEREO-CHEMISTRY.**—Dissymmetry and asymmetry of molecular configuration. F. G. Mann and W. J. Pope. *J.S.C.I.*, December 18, 1925, pp. 1225-1226.
- The configuration of the ammonium ion. W. H. Mills and E. H. Warren. *Chem. Soc. Trans.*, November, 1925, pp. 2507-2514.
- WASTE RECOVERY.**—The recovery and use of waste products. Part III. In the paper and sugar industries. J. B. C. Kershaw. *Ind. Chem.*, December, 1925, pp. 543-547.

United States

- ANALYSIS.**—An accurate general iodimetric method for the quantitative determination of the carbonyl group in organic compounds. E. G. R. Ardagh and J. G. Williams. *J. Amer. Chem. Soc.*, December, 1925, pp. 2983-2988.
- A gasometric method for the determination of acetic anhydride. E. L. Whitford. *J. Amer. Chem. Soc.*, December, 1925, pp. 2939-2940.
- CATALYSIS.**—On the mechanism of catalysis by aluminium oxide. M. C. Boswell and H. M. Dilworth. *J. Phys. Chem.*, December, 1925, pp. 1489-1506.
- An X-ray examination of some ammonia catalysts. R. W. G. Wyckoff and E. D. Crittenden. *J. Amer. Chem. Soc.*, December, 1925, pp. 2866-2867.
- COLLOIDS.**—The structure of gelatin gels. E. O. Kraemer. *J. Phys. Chem.*, December, 1925, pp. 1523-1527.
- On the theory of peptisation. K. C. Sen. *J. Phys. Chem.*, December, 1925, pp. 1533-1547.
- Viscosity of colloids in presence of electrolytes. N. R. Dhar. *J. Phys. Chem.*, December, 1925, pp. 1556-1567.
- COMBUSTION.**—Chemical equilibrium in gases exhausted by gasoline engines. W. G. Lovell and T. A. Boyd. *J. Ind. Eng. Chem.*, December, 1925, pp. 1216-1219.
- Gaseous explosions. Part II. Homogeneous and heterogeneous reactions defined and classified. G. G. Brown. *J. Ind. Eng. Chem.*, December, 1925, pp. 1229-1232.
- FOODSTUFFS.**—Use of sodium nitrite in curing meats. W. L. Lewis, R. S. Vose and C. D. Lowry. *J. Ind. Eng. Chem.*, December, 1925, pp. 1243-1245.
- OXIDATION.**—The mechanism of carbohydrate oxidation. Parts I, II and III. W. L. Evans. *J. Amer. Chem. Soc.*, December, 1925, pp. 3085-3105.

The oxidation of *d*-glucose by means of copper in sodium carbonate solution. F. W. Jensen and F. W. Upson. *J. Amer. Chem. Soc.*, December, 1925, pp. 3019-3024.

OILS.—Effect of yellow and brown iron oxide pigments upon rate of oxidation of linseed oil. F. H. Rhodes and J. D. Coope. *J. Ind. Eng. Chem.*, December, 1925, pp. 1255-1257.

Thermal expansion of California petroleum oils. E. H. Zeitfuchs. *J. Ind. Eng. Chem.*, December, 1925, pp. 1280-1283.

The composition of yellow oil obtained in the manufacture of *n*-butyl alcohol by fermentation. C. S. Marvel and A. E. Broderick. *J. Amer. Chem. Soc.*, December, 1925, pp. 3045-3051.

French

ALCOHOL.—The preparation of alcohol by chemical methods. E. Girod. *Rev. Chim. Ind.*; Part IV, October, 1925, pp. 306-308; Part V, November, 1925, pp. 341-344.

HYPOSULPHITE.—The manufacture of sodium hyposulphite. Part I. R. Hazard. *Rev. Chim. Ind.*, November, 1925, pp. 334-338.

REACTIVITY.—The reactivity of the hydrogen atoms of the methyl group in 1-methyl-2:4-dinitronaphthalene. V. Vesely and I. Pastak. *Bull. Soc. Chim.*, November, 1925, pp. 1444-1450.

RUBBER.—The two-phase structure of rubber. Part I. E. A. Hauser. *Rev. gén. Colloïdes*, October, 1925, pp. 289-293.

German

ACIDS.—The constitution of α -keto-glycolic acid. M. Hönig. *Ber.*, December 9, 1925, pp. 2644-2646.

2-Mercapto-5-methyl-benzoic acid. F. Krollpfeiffer, H. Schultze and E. Sommermeyer. *Ber.*, December 9, 1925, pp. 2695-2701.

ADSORPTION.—Active carbon and its adsorptive power. O. Ruff. *Z. angew. Chem.*, December 17, 1925, pp. 1164-1169.

The adsorption of gases by wood charcoal at pressures above 1 atmosphere. F. A. Henglein and M. Grzenkowski. *Z. angew. Chem.*, December 24, 1925, pp. 1186-1188.

ANALYSIS.—A new method for estimating dust in air and industrial gases. W. Allner. *Z. angew. Chem.*, December 17, 1925, pp. 1170-1171.

Methods and apparatus for chemical analysis with X-rays. R. Berthold. *Z. angew. Chem.*, December 24, 1925, pp. 1188-1191.

DYESTUFFS.—The fastness to light of body colours and its determination in natural and artificial light. H. Wagner. *Z. angew. Chem.*, December 24, 1925, pp. 1191-1195.

NEW ELEMENT.—On the discovery of eka-manganese. I. Tacke. *Z. angew. Chem.*, December 17, 1925, pp. 1157-1160.

PYRIDINE DERIVATIVES.—Some derivatives of 4-amino-pyridine. E. Koenigs, H. Friedrich and H. Jurany. *Ber.*, December 9, 1925, pp. 2571-2576.

The acylation of α -oxy-pyridine. A. E. Tschitschibabin and P. G. Szokow. *Ber.*, December 9, 1925, pp. 2650-2652.

REACTIONS.—The action of nitrogen tetroxide on rubber. F. Emden. *Ber.*, December 9, 1925, pp. 2522-2527.

The action of hydroxylamine on chromones. G. Wittig and F. Bangert. *Ber.*, December 9, 1925, pp. 2636-2642.

The action of ammonia on cotton cellulose. G. Bernardy. *Z. angew. Chem.*, December 24, 1925, pp. 1195-1197.

SCRUBBING.—New methods of scrubbing gases. Part V. G. Weissenberger, R. Henke and E. Sperling. *Z. angew. Chem.*, December 17, 1925, pp. 1161-1164.

SMELL.—The question of the smell of stereoisomers. F. Richter. *Z. angew. Chem.*, December 24, 1925, p. 1200.

SUGARS.—The acetone compounds of sugars and their derivatives. Parts III to VI. H. Ohle. *Ber.*, December 9, 1925, pp. 2577-2606.

Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each

Abstracts of Complete Specifications

- 243,183. PURE ALUMINA, METHOD OF PRODUCING. R. Jacobson, Kagerod, Sweden. Application date, December 16, 1924. Addition to 221,209.

Specification No. 221,209 (see THE CHEMICAL AGE, Vol. XI, p. 477) describes a method of producing alumina in which the raw materials are dissolved in hot concentrated sulphuric acid, and the water evaporated. The sulphuric acid is then driven off from the anhydrous sulphates by heat, and the iron oxide reduced to metallic iron. The product is heated in a current of chlorine in the presence of aluminium chloride. In the present invention, it is found that sulphuric acid of specific gravity of 1.3 may more advantageously be used. The undissolved residue is filtered off, and the solution evaporated to such an extent that the remaining water is bound as water of crystallisation when the solution is left to cool. After reduction of the iron oxide, the product may be heated to 300° C. in a current of hydrochloric acid (instead of chlorine), free from water and oxygen, in the presence of aluminium chloride or a chloride of another substance which has a greater affinity for oxygen than for chlorine and the chloride of which will react with iron oxide to form iron chloride. Such substances include carbon, chromium, and tin. These elements may be added instead of their chlorides, as they immediately react with the chlorine to form chloride.

- 243,192. SUPERPHOSPHATES, MANUFACTURE OF. A. C. Hyde, Perivale Lodge, Perivale, Ealing, Middlesex. Application date, January 19, 1925.

The object is to carry out the reaction between natural phosphatic rock and sulphuric acid in such a manner that a complete continuity of working is obtained, instead of the usual discontinuous process. The ore is ground to a powder sufficiently fine to pass a 200 mesh screen, and is projected into a reaction chamber in the form of a dust cloud. The sulphuric acid is used at its ordinary concentration—i.e., 1.840 specific gravity, and is sprayed into the chamber to mix with the ore dust. Under these conditions the chemical reaction is instantaneous, and since concentrated acid is employed, no drying of the product is necessary, so that it may be immediately packed into bags. If a less concentrated acid is used, some drying of the product may be necessary. The temperature of the operation may be about 15° C. or may be considerably higher.

- 243,394. ALKALI POLYSULPHIDES CONTAINING SULPHUR IN A COLLOIDAL FORM, PRODUCTION OF. R. Russell, "Yaldersgate," Beechwood, Heaton Park, Manchester. Application date, May 23, 1924.

To obtain this colloidal sulphur product a mixture of a sulphur-containing substance, a boron compound, and a sodium or potassium compound, with water, is heated to 100° to 200° C., and the product filtered. The mixture employed may consist of flowers of sulphur 50 parts, borax 25 parts, soda ash 25 parts, water 100 parts. Othersodium or potassium compounds may be employed, such as the carbonate, bicarbonate, or hydroxide, and other boron compounds such as boric acid or oxide; also orthoborates, metaborates, or pyroborates may be used. The product can be diluted with water without precipitating the sulphur, which is of high concentration, or the sulphur can be precipitated by adding acid. This product can advantageously be used for mixing with rubber, since the necessary sulphur can be added to rubber solution or rubber latex without materially affecting the volume of the mixture. This process may also be used for the extraction of sulphur from sulphur ores, oils, hydrocarbons, and oil-bearing shale, the sulphur being precipitated from the product by adding acid.

- 243,470. SYNTHETIC RESIN COMPOSITION. A. E. Alexander, London. From J. S. Stokes, Summerdale, Philadelphia, Pa., U.S.A. Application date, September 9, 1924.

This improved condensation product is obtained from phenol, furfural and a catalyst. The mixture reacts with

great speed, and is easily moulded, yielding a deep black, hard, and smooth product, particularly suitable for the manufacture of printing plates and phonograph records. The product has the advantage that it can be removed from the mould while hot without injury. The term phenol covers substances having similar characteristics such as cresol, resorcinol, or naphthol, and the term furfural includes any derivative. A fusible resin is first manufactured, and subsequently hardened by treating with a methylene or furfural or furfuramide hardening agent. The catalyst employed may be acid or basic, such as hydrochloric acid or potassium carbonate. The product may be prepared as a solution in alcohol or acetone, or in solid form. Reference is directed in pursuance of Section 7, sub-section 4, of the Patents and Designs Acts of 1907 and 1919, to Specification No. 187,480.

- 243,510. ESTERS OF UNSATURATED ACIDS, MANUFACTURE OF. O. Y. Imray, London. From Soc. of Chemical Industry in Basle. Application date, November 7, 1924.

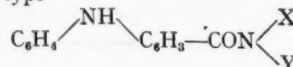
These therapeutic compounds are obtained by esterifying with cholesterolin by the usual methods an aliphatic or aliphatic-aromatic acid having a treble linking, or an aliphatic acid having at least one double linking and low in the series, or an aliphatic aromatic acid having at least one double linking in the side chain. Examples are given of the reaction of cholesterolin with phenyl propionic acid chloride, crotonic acid chloride, tetrolic acid and thionyl chloride, and α -benzylidene propionic acid chloride. The therapeutic activity of these compounds is increased by solution in phenyl acetylene and camphor.

- 243,534. CARBONISING FUELS, PROCESS AND APPARATUS FOR. F. Krauss, 6, Stephansplatz, Vienna. Application date, December 8, 1924.

This apparatus is for distilling or gasifying peat, brown coal, lignite, and other fuels rich in water. The hot gases produced in a closed coking chamber are passed into a second fuel chamber concentric with the first, in which fuel is carbonised. The gases mixed with the distillation products from this chamber are passed into one or more additional chambers surrounding the first two chambers, for the purpose of carbonising or drying the fuel. A detailed description of the plant is given.

- 243,557. SULPHIDE DYES AND INTERMEDIATE PRODUCTS, MANUFACTURE OF. W. Carpmal, London. From Farbenfabriken vorm. F. Bayer and Co., Leverkusen, near Cologne, Germany. Application date, January 12, 1925.

This process is for obtaining carbazoloic acid amide indophenols substituted in the amino group. An amino body is caused to react in the presence of a condensing agent upon a carbazoloic acid to produce a carbazoloic acid amide compound of the type

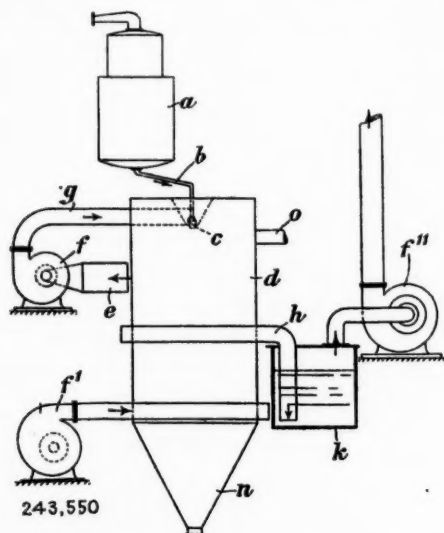


where X is hydrogen or a hydrocarbon radicle, and Y a hydrocarbon radicle. These substances condense easily with nitrosophenols, though the carbazoloic acids themselves do not. The different carbazole carboxylic acids may be used, especially the carbazole-1-carboxylic acid, and carbazole-3-carboxylic acid. In an example, carbazole-1-carboxylic acid is condensed in boiling toluene solution with 2-amido-carbazole in the presence of phosphorus trichloride as a condensing agent. The solvent is distilled off, and the arylide digested with water and filtered off. The 1-carbazoloic acid 2-carbazole amide is soluble in concentrated sulphuric acid, but not in organic solvents, water, caustic alkali, or dilute acids. The arylide solution may be condensed with molecular proportions of nitrosophenol, and the indophenol precipitated as a blue powder soluble in concentrated sulphuric acid. It may be reduced with sodium sulphide or hydrosulphide in alkaline solution to the corresponding leuco compound. Other examples describe the condensation of

carbazole-2-carboxylic acid with dimethylamine, and the treatment of condensation product in concentrated sulphuric acid solution with nitrosophenol; the condensation of carbazole-3-carboxylic acid with paratoluidine, and the formation of the corresponding indophenol by treatment with nitrosophenol; the condensation of carbazole-2-carboxylic acid with paratoluidine, and subsequent treatment with paranitrosophenol; also the treatment of these various phenols with sodium sulphide to obtain dyestuffs yielding shades on cotton which on oxidation are blue, bluish-black, or black.

243,550. REMOVING TETRA-NITRO-METHANE FROM TRINITROTOLUENE, METHOD OF. R. H. Gärtner, 72, Heimbühderstrasse, Hamburg, Germany. Application date, December 29, 1924.

The product of the nitration of nitrotoluene contains isomeric trinitrotoluenes, binitrotoluene, and tetranitromethane. The formation of the first two can be avoided



243,550

if nitrotoluene or binitrotoluene free from metanitrotoluene and free from metabinitrotoluene is further nitrated, but tetranitromethane is still produced, and the object is to eliminate it.

The trinitrotoluene is melted in a vessel *a* and passes by a pipe *b* to an atomising nozzle *c* at the top of a tank *d*. Air passes from a heater *e* to a fan *f*, and is forced through a pipe *g* into contact with the atomised trinitrotoluene. The tetranitromethane is thus evaporated, and the falling trinitrotoluene is maintained liquid by another supply of hot air admitted through the pipe *h*. The trinitrotoluene is finally cooled by cold air supplied by the fan *f'*, and the gases are drawn off through a pipe *n* to a settling tank *k* and fan *f''*. The solidified trinitrotoluene collects at the lower part *n* of the tank. The tetranitromethane is more readily removed if steam is used instead of hot air.

243,607. PURIFYING MATERIALS FOR ACETYLENE AND OTHER GASES. Chemische Fabrik Griesheim Elektron, 31, Gutleutstrasse, Frankfurt-on-Main, Germany, and A. Hermann, Rheinfelden (Baden), Germany. Application date, April 24, 1925.

Oxidising purifying materials for acetylene have been obtained by adding calcium hydrate or carbonate, with or without calcium chloride, to a sludge of chloride of lime to obtain a material which becomes porous on drying. This material contains only about 15 per cent. of available chlorine, and also some calcium chloride, which renders it hygroscopic. In the present invention, the amount of available chlorine is increased to about double that previously employed without the danger of explosion, which was formerly present when a high concentration of chlorine was employed. Basic calcium hypochlorite compounds are employed, prepared as described in Specification No. 188,662 (see THE CHEMICAL AGE,

Vol. VIII, p. 101), and these are mixed after manufacture with binding materials such as gypsum or cement, and dried. The necessary high porosity is obtained by the addition of materials which in conjunction with the other constituents produce gases at ordinary temperature, such as aluminium, magnesium, or their alloys. It is found that 0.1 per cent. of magnesium powder is sufficient for this purpose. The product is not hygroscopic, and contains 30 to 40 per cent. of available chlorine.

243,643. REMOVING PHOSPHATIDES FROM VEGETABLE OILS, METHOD OF. H. Bollmann, 1, Alsterdamm, Hamburg, Germany. International Convention date, May 15, 1925.

In the purification of vegetable oils derived from oil seeds containing lecithin such as soya beans by means of alcohol to remove fatty acids, difficulties are experienced owing to the formation of emulsions. It has been found that this is due to the emulsifying effect of small quantities of phosphatides. The difficulty can be avoided by subjecting the oil to a preliminary agitation with about 10 per cent. of a 0.1 per cent. barium hydroxide solution for a few minutes. The mixture is allowed to settle into two layers, oil and aqueous liquid. The free fatty acid content of the oil is only slightly decreased, and the treated oil is capable of much greater bleaching and can be refined with alcohol without the production of emulsions.

NOTE.—Abstracts of the following specifications which are now accepted, appeared in THE CHEMICAL AGE when they became open to inspection under the International Convention: 221,226 (G. Austerweil), relating to preparation of thymol from 2-cymidine, see Vol. XI, p. 477; 225,523 (Farbenfabriken vorm. F. Bayer & Co.), relating to manufacture of lithopone, see Vol. XII, p. 116; 231,453 (Soc. Lyonnaise des Schistes Bitumineux), relating to distillation of bituminous schist, asphalt rock, lignite, etc., see Vol. XII, p. 563; 231,800 (L. Lilienfeld), relating to new cellulose compounds, see Vol. XII, p. 591; 232,610 (A. Forgeur and L. Grange), relating to manufacture of oxide of zinc, see Vol. XII, p. 642; 232,629 (Akt.-Ges. für Anilin Fabrikation), relating to manufacture of ortho-oxyazo-dyestuffs, see Vol. XII, p. 642; 236,577 (Chemische Fabrik Griesheim Elektron), relating to carbon disulphide furnaces, see Vol. XIII, p. 255; 236,918 (Chemische Werke Lothringen Ges.), relating to absorption apparatus for gases and vapours, see Vol. XIII, p. 284.

International Specifications not yet Accepted

242,223. CRACKING HYDROCARBONS. H. Wolf, 3, Dorotheenstrasse, Bad Homburg vor der Höhe, Germany. International Convention date, November 3, 1924.

Hydrocarbon oils are cracked under pressure above 390° C. and the products are expanded and cooled immediately by mixing with cooled residual products, reflux condensate, or crude oil. The oil is cracked by passing it under pressure through a heated coil or a metal bath, and then passes through a nozzle into a vessel filled with Raschig rings and containing oil. If the temperature is reduced to 100°–150° C., the lighter products pass off as vapours.

242,233. DYEING. Badische Anilin und Soda Fabrik, Ludwigshafen-on-Rhine, Germany. International Convention date, October 30, 1924.

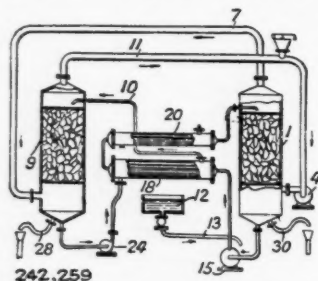
To obtain dyeings fast to rubbing, the fibre is wetted with or the dyebath mixed with propylated or butylated aromatic sulphonic acids or their salts or such derivatives of other cyclic hydrocarbons with or without higher aliphatic alcohols. Thus a dyebath for wool, comprising Cyananthrol, Azoflavine, Sorbine Red, etc., Glauber's salt, sodium isopropyl-naphthalene sulphonate and sulphuric acid may be used; a dyebath for raw cotton yarn may comprise Indanthrene blue G C D, caustic soda, sodium hydrosulphite, and sodium butyl naphthalene sulphonate.

242,234. SILICA GEL. Chemische Fabrik Auf Actien (vorm. E. Schering), 170, Müllerstrasse, Berlin. International Convention date, November 3, 1924.

Silica gel is not washed until entirely freed from electrolyte and washing is continued until the gel contains 2 per cent. of salt.

- 242,259. EVAPORATING AND DISTILLING PLANT. Soc. Generale d'Evaporation Procédés Prache and Bouillon, 25, Rue de la Pépinière, Paris. International Convention date, October 31, 1924.

Liquid is evaporated by passing air or gas through it and then into a condenser, and employing the condensate to heat the liquid. The liquid is forced by a pump 15 to a heat exchanger



18, and a tubular or electric heater 20. The liquid then passes downwards through a column 1 packed with coke, or metal packing, and thence back to the pump. Air is forced upwards through the column 1 by the pump 4, and thence through pipe 7 to a column 9 which acts as a condenser, returning through a pipe 11 to the pump 4. The hot condensate passes from the column 9 through a pump 24 to a heat exchanger 18 and thence to the top of the column 9 by a pipe 10. Concentrated liquid is withdrawn through the pipe 30, and fresh liquid supplied from a tank 12. The hot condensate from the column 9 may alternatively be used to evaporate ammonia or sulphur dioxide, the vapour from which is compressed into a coil in the liquid to be treated. Several other alternatives are described and also a method of drying pasty materials.

LATEST NOTIFICATIONS.

- 244,443. Manufacture of poly-iodine substituted isatin. Chemische Fabrik auf Actien (vorm. E. Schering). December 10, 1924.
 244,444. Manufacture of a new iodine substituted oxindol. Chemische Fabrik auf Actien (vorm. E. Schering). December 10, 1924.
 244,450. Manufacture of anthraquinone derivatives. Farbwerte vorm. Meister, Lucius, and Brüning. December 12, 1924.
 244,462. Manufacture of new anthraquinone derivatives. Farbfabriken vorm. F. Bayer and Co. December 9, 1924.
 244,463. Manufacture of new anthraquinone derivatives. Farbfabriken vorm. F. Bayer and Co. December 9, 1924.
 244,496. Manufacture of artificial silk and the like. British Enka Artificial Silk Co., Ltd. December 15, 1924.

Specifications Accepted with Date of Application

- 221,802. Zirconium and hafnium halogenides, Process for separating a mixture of. Naamlooze Vennootschap Philips' Gloeilampenfabrieken. September 15, 1923.
 233,669. Recovery of ammonia from the waste waters in the manufacture of artificial filaments by the cuprammonium process, Process for. J. P. Bemberg Akt.-Ges. May 6, 1924.
 234,830. Aluminium oxide or products containing aluminium oxide, Process for producing. T. R. Haglund. June 2, 1924.
 235,844. Zinc oxide, Manufacture of. New Jersey Zinc Co. June 17, 1924.
 235,864. Derivatives of organic arsenical compounds, Process for the preparation of. Deutsche Gold- und Silber-Scheideanstalt vorm. Roessler. June 18, 1924. Addition to 199,092.
 238,172. Liquid purification of fuel gas, Process and apparatus for. Koppers Co. August 7, 1924.
 240,148. Pure phosphoric acid, Preparation of—starting from natural phosphates. C. Millberg. September 18, 1924.
 244,135. Emulsions, Process and apparatus for making. L. Kirschbraun. June 10, 1924.
 244,148. Cellulose derivatives, Manufacture and production of. J. O. Zdanowich. August 15, 1924.
 244,159. New accelerators and intermediate compounds for use in the vulcanisation of rubber, Manufacture of. British Dyestuffs Corporation, Ltd., C. J. T. Cronshaw, and W. J. S. Naunton. September 9, 1924.
 244,267. Dyeing cellulose acetate or materials containing it. British Dyestuffs Corporation, Ltd., W. H. Perkin and C. Hollins. December 16, 1924.
 244,275. Distilling oil shale, bituminous coal and the like to obtain light hydrocarbons, Process of and apparatus for. A. L. Mond. (American Shale Reduction Co.) December 22, 1924.

- 244,337. Coke, gas, and tar from solid fuel, Process of and apparatus for producing. J. Rude. May 11, 1925.
 244,372. Electrical gas purification. Lodge Cottrell, Ltd. (Metallbank und Metallurgische Ges.) August 29, 1925. Addition to 177,117 as modified by 238,480.

Applications for Patents

- Akt.-Ges. für Anilin-Fabrikation. Dissolution of substances. 31,688. December 15. (Germany, December 23, 1924.)
 Akt.-Ges. für Anilin-Fabrikation. Manufacture of azo-dyestuffs. 31,764. December 16. (Germany, December 16, 1924.)
 Benzol-Verband Ges. Alcohol, etc. 31,515. December 14. (Germany, September 4.)
 Bone, W. A. Manufacture of useful products by oxidising coal. 31,520. December 14.
 Bone, W. A. Manufacture of carbon compounds. 31,521. December 14.
 British Dyestuffs Corporation, Ltd., Carter, D., and Jackson, H. Production of uni- or multi-coloured effects. 32,049. December 18.
 British Enka Artificial Silk Co., Ltd. Manufacture of artificial silk, etc. 31,689. December 15. (Germany, December 15, 1924.)
 Carpmel, W., and I. G. Farbenindustrie Akt.-Ges. Manufacture of chromates. 31,950. December 17.
 Cassella and Co. Ges., L. Manufacture of complex auro-sodium-thiosulphate solutions. 31,951. December 17. (Germany, January 27.)
 Celite Co. and Haddan, A. J. H. Manufacture of an inorganic chemical product. 32,046. December 18.
 Chemische Fabrik auf Actien, vorm. E. Schering. Manufacture of C. C-substituted compounds of barbituric acid. 32,039. December 18. (Austria, December 24, 1924.)
 Dehn, F. B., and Röhm, O. Artificial tanning materials and tanning process. 32,142. December 19.
 Deutsche Gasglühlicht Auer-Ges. Manufacture of refractory substances from high-grade oxide of zirconium. 31,799. December 16. (Germany, December 24, 1924.)
 Farbwerte vorm. Meister, Lucius and Brüning. Manufacture of finely-subdivided pigment dyes, etc. 31,687. December 15. (Germany, January 22.)
 Heffner, L. W. and Tiddy, W. Recovery of phenols from ammoniacal liquor. 31,646. December 15. (United States, December 16, 1924.)
 I. G. Farbenindustrie Akt.-Ges., and Johnson, J. Y. Manufacture of hydrocyanic acid. 31,552. December 14.
 I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Recovery of sulphur. 31,901. December 17.
 I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of colour lakes. 31,902. December 17.
 Imray, O. Y., and Soc. of Chemical Industry in Basle. Manufacture of dyestuffs. 31,690. December 15.
 Johnson, R. R., and A. M. Mackilligin. Cyanide processes of extracting metal. 31,885. December 17.
 Kyber, W. Manufacture of phosphoric acid. 31,499. December 14. (Germany, February 25.)
 MacEwen, S. R. Manufacture of solutions of derivatives of dioxy-diaminoarsenobenzene. 31,955. December 17.

Increasing Uses of Soya Oil

THE chief use to which bean oil has been put in Europe and America is in the manufacture of soap. The increasing price of cottonseed oil has made it necessary for soap manufacturers to find a suitable oil as an alternative, and bean oil with its low price furnished the answer. Since business began to expand, the price of bean oil has increased somewhat, but it is still cheaper than other vegetable oils, and while it is not as uniform in character as cottonseed oil and is more likely to become rancid, it is now firmly established in the soap trade, according to *Drug and Chemical Markets*.

Refined bean oil is used in the preparation of various edible goods, chiefly salad oil, tinned fish, and in the manufacture of toilet powders, paint oils, lubricating and lighting oils. Experiments have shown that it can be mixed with linseed oil for the preparation of paints and varnishes in the ratio of one part bean oil to three parts linseed oil without appreciably affecting the quality or the properties of the paint or varnish. During the war an enormous amount of bean oil was used in the production of glycerin, which in normal times is a by-product of the soap factory as it results when the vegetable oils are saponified. The glycerin was used in the manufacture of nitro-glycerin and other explosives.

Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

General Heavy Chemicals

ACID ACETIC, 40% TECH.—£20 per ton.
 ACID BORIC, COMMERCIAL.—Crystal, £40 per ton, Powder, £42 per ton.
 ACID HYDROCHLORIC.—3s. 9d. to 6s. per carbonyl d/d, according to purity, strength, and locality.
 ACID NITRIC, 80% Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.
 ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations; 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.
 AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.
 BLEACHING POWDER.—Spot, £10 10s. d/d; Contract, £8 10s. d/d, 4-ton lots.
 BISULPHITE OF LIME.—£7 10s. per ton, packages extra, returnable.
 BORAX, COMMERCIAL.—Crystal, £25 per ton. Powder, £26 per ton. (Packed in 2-cwt. bags, carriage paid any station in Great Britain.)
 CALCIUM CHLORIDE (SOLID).—£5 12s. 6d. to £5 17s. 6d. per ton d/d, carr. paid.
 COPPER SULPHATE.—£25 to £25 10s. per ton.
 METHYLATED SPIRIT 64 O.P.—Industrial, 2s. 5d. to 2s. 11d. per gall. Mineralised, 3s. 8d. to 4s. per gall., in each case according to quantity.
 NICKEL SULPHATE.—£38 per ton d/d.
 NICKEL AMMONIA SULPHATE.—£38 per ton d/d.
 POTASH CAUSTIC.—£30 to £33 per ton.
 POTASSIUM BICHROMATE.—4½d. per lb.
 POTASSIUM CHLORATE.—3½d. per lb., ex wharf, London, in cwt. kegs.
 SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.
 SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.
 SODA CAUSTIC, SOLID.—Spot lots delivered, £15 12s. 6d. to £18 per ton, according to strength; 30s. less for contracts.
 SODA CRYSTALS.—£5 to £5 5s. per ton ex railway depots or ports.
 SODIUM ACETATE 97/98%.—£21 per ton.
 SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.
 SODIUM BICHROMATE.—3½d. per lb.
 SODIUM BISULPHITE POWDER 60/62%.—£17 per ton for home market, 1-cwt. iron drums included.
 SODIUM CHLORATE.—3d. per lb.
 SODIUM NITRATE, REFINED 96%.—£13 5s. to £13 10s. per ton, ex Liverpool.
 SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.
 SODIUM PHOSPHATE.—£14 per ton, f.o.r. London, casks free.
 SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.
 SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.
 SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.
 SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.r. London, 1-cwt. kegs included.

Coal Tar Products

ACID CARBOLIC CRYSTALS.—4½d. to 4½d. per lb. Crude 60's, 1s. 4d. Little demand.
 ACID CRESYLIC 97/99.—1s. 7d. to 1s. 9d. per gall. Pale, 95%, 1s. 5d. to 1s. 9d. per gall. Dark, 1s. 4d. to 1s. 6d. per gall. Good demand.
 ANTHRACENE PASTE 40%.—3d. per unit per cwt.—Nominal price. No business.
 ANTHRACENE OIL, STRAINED.—8d. per gall. Good inquiry. Unstrained, 7d. per gall.
 BENZOL.—Crude 65's, 1s. 2d. to 1s. 3d. per gall., ex works in tank wagons. Standard Motor, 1s. 8d. to 1s. 10d. per gall., ex works in tank wagons. Pure, 1s. 11d. to 2s. 3d. per gall., ex works in tank wagons.
 TOLUOL.—90%, 1s. 8½d. per gall. More inquiry. Pure, 1s. 11d. to 2s. 2d. per gall.
 XYLOL COMMERCIAL.—1s. 10d. to 2s. 3d. per gall. Pure, 2s. 1d. to 3s. 3d. per gall.
 CREOSOTE.—Cresylic, 20/24%, 8½d. per gall. Market very quiet. Standard specification, 7d. to 7½d. per gall.; middle oil, heavy, 6½d. per gall. Market steady.
 NAPHTHA.—Crude 9½d. per gall. Solvent 90/160, 1s. 5d. to 1s. 11d. per gall. Fair business. Solvent 90/190, 1s. 2d. to 1s. 6d. per gall. Moderate demand.
 NAPHTHALENE CRUDE.—Drained Creosote Salts, £3 to £5 per ton. Whizzed or hot pressed, £5 10s. to £6.
 NAPHTHALENE.—Crystals and Flaked, £12 to £13 per ton, according to districts.
 PITCH.—Medium soft, 45s. to 55s. per ton, according to district. Market active.
 PYRIDINE.—90/160, 17s. 6d. to 20s. per gall. Firmer. Heavy, 10s. 6d. to 11s. per gall. More inquiry.

Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated.
 ACETIC ANHYDRIDE 95%.—1s. 7d. per lb.
 ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.
 ACID ANTHRANILIC.—7s. per lb. 100%.
 ACID BENZOIC.—1s. 9d. per lb.
 ACID GAMMA.—9s. per lb.
 ACID H.—3s. 6d. per lb. 100% basis d/d.
 ACID NAPHTHIONIC.—2s. 2d. per lb. 100% basis d/d.
 ACID NEVILLE AND WINTHER.—4s. 9d. to 4s. 10d. per lb. 100% basis d/d.
 ACID SULPHANILIC.—9d. per lb. 100% basis d/d.
 ALUMINIUM CHLORIDE, ANHYDROUS.—10d. per lb. d/d.
 ANILINE OIL.—7d. to 7½d. per lb. naked at works.
 ANILINE SALTS.—7d. to 8d. per lb. naked at works.
 ANTIMONY PENTACHLORIDE.—1s. per lb. d/d.
 BENZALDEHYDE.—2s. 1½d. per lb. Good home inquiry.
 BENZIDINE BASE.—3s. 6d. per lb. 100% basis d/d.
 BENZYL CHLORIDE 95%.—1s. 1d. per lb.
 p-CHLOROPHENOL.—4s. 3d. per lb. d/d.
 p-CHLORANILINE.—3s. per lb. 100% basis.
 o-CRESOL 29/31° C.—3d. per lb. Demand quiet.
 m-CRESOL 98/100%.—2s. 1d. to 2s. 3d. per lb. Demand moderate.
 p-CRESOL 32/34° C.—2s. 1d. to 2s. 3d. per lb. Demand moderate.
 DICHLORANILINE.—2s. 3d. per lb.
 DICHLORANILINE S. ACID.—2s. 3d. per lb. 100% basis.
 DIETHYLANILINE.—4s. 3d. per lb. d/d., packages extra, returnable.
 DIMETHYLANILINE.—2s. per lb. d/d. Drums extra.
 DINITROBENZENE.—9d. per lb. naked at works.
 DINITROCHLOROBENZENE.—£84 per ton d/d.
 DINITROTOLUENE.—48/50° C. 8d. to 9d. per lb. naked at works. 66/68° C. 10d. per lb. naked at works.
 DIPHENYLANILINE.—2s. 10d. per lb. d/d.
 G. SALT.—2s. 2d. per lb. 100% basis d/d.
 a-NAPHTHOL.—2s. per lb. d/d. Fair home inquiry.
 B-NAPHTHOL.—11d. to 1s. per lb. d/d. Fair home inquiry.
 a-NAPHTHYLAMINE.—1s. 3d. per lb. d/d. Fair home inquiry.
 B-NAPHTHYLAMINE.—3s. 9d. per lb. d/d. Fair home inquiry.
 o-NITRANILINE.—5s. 9d. per lb.
 m-NITRANILINE.—3s. 6d. per lb. d/d.
 p-NITRANILINE.—1s. 10d. per lb. d/d. Fair home inquiry.
 NITROBENZENE.—5½d. per lb. naked at works. Good home inquiry.
 o-NITROCHLOROBENZOL.—2s. 3d. per lb. 100% basis d/d.
 NITRONAPHTHALENE.—10d. per lb. d/d.
 p-NITROPHENOL.—1s. 9d. per lb. 100% basis d/d.
 p-NITRO-O-AMIDO-PHENOL.—4s. 6d. per lb. 100% basis.
 m-PHENYLENE DIAMINE.—4s. per lb. d/d.
 p-PHENYLENE DIAMINE.—9s. 9d. per lb. 100% basis d/d.
 R. SALT.—2s. 4d. per lb. 100% basis d/d.
 SODIUM NAPHTHIONATE.—1s. 9d. per lb. 100% basis d/d.
 o-TOLUIDINE.—9d. per lb. Good home inquiry.
 p-TOLUIDINE.—2s. 3d. per lb. naked at works.
 m-TOLUYLENE DIAMINE.—4s. per lb. d/d.
 m-XYLIDINE ACETATE.—2s. 11d. per lb. 100%.

Wood Distillation Products

ACETATE OF LIME.—Brown, £8. Quiet market. Grey, £14 10s. per ton. Liquor, 9d. per gall. 32° Tw.
 ACETONE.—£73 per ton.
 CHARCOAL.—£7 to £9 per ton, according to grade and locality. Demand fair.
 IRON LIQUOR.—1s. 7d. per gall. 32° Tw. 1s. 2d. per gall., 24° Tw.
 RED LIQUOR.—10d. to 1s. per gall. 15° Tw.
 WOOD CREOSOTE.—2s. 7d. per gall. Unrefined.
 WOOD NAPHTHA, MISCIBLE.—5s. per gall. 60% O.P. Solvent, 4s. 6d. per gall. 40% O.P. Very quiet.
 WOOD TAR.—£3 15s. to £5 per ton, according to grade.
 BROWN SUGAR OF LEAD.—£40 per ton.

Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 7½d. to 1s. 5d. per lb., according to quality, Crimson, 1s. 5d. to 1s. 7½d. per lb., according to quality.
 ARSENIC SULPHIDE, YELLOW.—2s. per lb.
 BARYTES.—£3 10s. to £6 15s. per ton, according to quality.
 CADMIUM SULPHIDE.—4s. 4d. per lb.
 CARBON BISULPHIDE.—£25 to £28 per ton, according to quantity.
 CARBON BLACK.—5½d. per lb., ex wharf.
 CARBON TETRACHLORIDE.—£55 to £60 per ton, according to quantity, drums extra.
 CHROMIUM OXIDE, GREEN.—1s. 3d. per lb.
 DIPHENYLGUANIDINE.—4s. to 4s. 3d. per lb.
 INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5½d. to 6½d. per lb.
 LAMP BLACK.—£43 per ton, barrels free.

LEAD HYPOSULPHITE.—9d. per lb.
LITHOPONE, 30%.—£22 10s. per ton.
MINERAL RUBBER "RUBPRON".—£13 12s. 6d. per ton f.o.r. London.
SULPHUR.—£9 to £11 per ton, according to quality.
SULPHUR CHLORIDE.—4d. per lb., carboys extra.
SULPHUR PRECIP. B.P.—£50 to £55 per ton.
THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb.
THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.
VERMILION, PALE OR DEEP.—5s. per lb.
ZINC SULPHIDE.—1s. 1d. per lb.

Pharmaceutical and Photographic Chemicals

ACID, ACETIC, 80% B.P.—£39 per ton ex wharf London in glass containers.
ACID, ACETYL SALICYLIC.—2s. 5d. to 2s. 7d. per lb. Keen competition continuing. Good demand.
ACID, BENZOIC B.P.—2s. to 2s. 3d. per lb., according to quantity.
ACID, BORIC B.P.—Crystal, £46 per ton; Powder, £50 per ton. Carriage paid any station in Great Britain.
ACID, CAMPHORIC.—19s. to 21s. per lb.
ACID, CITRIC.—1s. 4d. per lb., less 5%. Unsettled.
ACID, GALLIC.—2s. 8d. per lb. for pure crystal, in cwt. lots.
ACID, PYROGALLIC, CRYSTALS.—5s. 3d. per lb. Resublimed, 7s. 6d.
ACID, SALICYLIC.—1s. 2½d. to 1s. 5d. per lb. Technical.—10½d. to 11d. per lb.
ACID, TANNIC B.P.—2s. 10d. per lb.
ACID, TARTARIC.—1s. 0½d. per lb., less 5%. Market firm.
AMIDOL.—6s. 6d. per lb., d/d.
ACETANILIDE.—1s. 7d. to 1s. 8d. per lb. for quantities.
AMIDOPYRIN.—12s. 6d. per lb.
AMMONIUM BENZOATE.—3s. 3d. to 3s. 6d. per lb., according to quantity.
AMMONIUM CARBONATE B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks.
ATROPINE SULPHATE.—11s. per oz. for English make.
BARBITONE.—10s. per lb.
BENZONAPHTHOL.—3s. 3d. per lb. spot.
BISMUTH CARBONATE.—15s. 6d. to 17s. 6d. per lb.
BISMUTH CITRATE.—12s. 9d. to 14s. 9d. per lb.
BISMUTH SALICYLATE.—12s. 6d. to 14s. 6d. per lb.
BISMUTH SUBNITRATE.—13s. to 15s. per lb. according to quantity.
BORAX B.P.—Crystal, £29; Powder, £30 per ton. Carriage paid any station in Great Britain.
BROMIDES.—Potassium, 1s. 9d. to 1s. 11d. per lb.; sodium, 2s. to 2s. 2d. per lb.; ammonium, 2s. 3d. to 2s. 5d. per lb., all spot.
CALCIUM LACTATE.—1s. 4d. to 1s. 5d. Market firmer.
CHLORAL HYDRATE.—3s. 5d. to 3s. 6d. per lb., duty paid.
CHLOROFORM.—2s. 3d. to 2s. 7½d. per lb., according to quantity.
CREOSOTE CARBONATE.—6s. per lb.
FORMALDEHYDE.—£41 per ton, in barrels ex wharf.
GLYCEROPHOSPHATES.—Fair business passing. Calcium, soluble and citrate free, 7s. per lb.; iron, 8s. 9d. per lb.; magnesium, 9s. per lb.; potassium, 50%, 3s. 6d. per lb.; sodium, 60%, 2s. 6d. per lb.
GUAIACOL CARBONATE.—7s. per lb. Advanced.
HEXAMINE.—2s. 4d. to 2s. 6d. per lb.
HOMATROPINE HYDROBROMIDE.—30s. per oz.
HYDRASTINE HYDROCHLORIDE.—English make offered at 120s. per oz.
HYDROGEN PEROXIDE (12 VOLTS).—1s. 8d. per gallon f.o.r. makers' works, naked.
HYDROQUINONE.—4s. 4½d. per lb., in cwt. lots.
HYPOPHOSPHITES.—Calcium, 3s. 6d. per lb., for 28-lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.
IRON AMMONIUM CITRATE B.P.—2s. to 2s. 3d. per lb. Green, 2s. 4d. to 2s. 9d. per lb. U.S.P., 1s. 11d. to 2s. 2d. per lb.
MAGNESIUM CARBONATE.—Light Commercial, £33 per ton net.
MAGNESIUM OXIDE.—Light Commercial, £70 per ton, less 2½%, price reduced; Heavy Commercial, reduced to £23 per ton, less 2½%; Heavy Pure, 2s. to 2s. 3d. per lb., according to quantity.
MENTHOL.—A.B.R. recrystallised B.P., 33s. net per lb., December delivery. Synthetic, 22s. 6d. to 27s. 6d. per lb., according to quality. English make. Very heavy demand.
MERCURIALS.—Red oxide, 5s. 2d. to 5s. 4d. per lb.; Corrosive sublimate, 3s. 9d. to 3s. 11d. per lb.; white precipitate, 4s. 6d. to 4s. 8d. per lb.; Calomel, 4s. to 4s. 2d. per lb. Market flat.
METHYL SALICYLATE.—1s. 6½d. to 1s. 7½d. per lb.
METHYL SULPHONAL.—16s. 9d. per lb.
METOL.—9s. per lb. British make.
PARAFORMALDEHYDE.—1s. 11d. for 100% powder.
PARALDEHYDE.—1s. 4d. per lb.
PHENACETIN.—4s. to 4s. 3d. per lb.
PHENAZONE.—6s. to 6s. 3d. per lb. Spot lower than forward price.
PHENOLPHTHALEIN.—4s. to 4s. 3d. per lb. Supply exceeds demand.
POTASSIUM BITARTRATE 99/100% (Cream of Tartar).—80s. per cwt., less 2½% for ton lots. Market very firm.
POTASSIUM CITRATE.—1s. 11d. to 2s. 2d. per lb.
POTASSIUM FERRICYANIDE.—1s. 9d. per lb. in cwt. lots. Quiet.
POTASSIUM IODIDE.—16s. 8d. to 17s. 2d. per lb., according to quantity. Steady market.

POTASSIUM METABISULPHITE.—7½d. per lb., 1-cwt. kegs included, f.o.r. London.
POTASSIUM PERMANGANATE.—B.P. crystals, 7½d. per lb., spot. slightly easier.
QUININE SULPHATE.—2s. 3d. to 2s. 4d. per oz., in 100 oz. tins. Steady market.
RESORCIN.—3s. 9d. per lb. In fair quantities.
SACCHARIN.—51s. 5d. to 53s. 8d. per lb., according to quantity. Limited inquiry.
SALOL.—3s. per lb.
SILVER PROTEINATE.—12s. per lb. for satisfactory product light in colour.
SODIUM BENZOATE, B.P.—1s. 10d. to 2s. 2d. per lb.
SODIUM CITRATE, B.P.C., 1911.—1s. 8d. to 1s. 11d. per lb., B.P.C., 1923. 1s. 11d. to 2s. 2d. per lb., according to quantity. Advanced.
SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—£14 to £15 per ton, according to quantity, d/d consignee's station in 1-cwt. kegs.
SODIUM METABISULPHITE CRYSTALS.—37s. 6d. to 60s. per cwt., net cash, according to quantity.
SODIUM NITROPRUSSIDE.—16s. per lb.
SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).—75s. to 80s. per cwt., according to quantity.
SODIUM SALICYLATE.—Powder, 1s. 10d. to 2s. per lb. Crystal, 1s. 11d. to 2s. 1d. per lb. Very heavy demand.
SODIUM SULPHIDE, PURE RECRYSTALLISED.—10d. to 1s. 2d. per lb.
SODIUM SULPHITE, ANHYDROUS, £27 10s. to £28 10s. per ton, according to quantity; 1-cwt. kegs included.
SULPHONAL.—12s. per lb. Limited demand.
THYMOL.—12s. to 15s. per lb. Strong demand.

Perfumery Chemicals

ACETOPHENONE.—9s. per lb.
AUBEPINE (EX ANETHOL).—10s. 3d. per lb.
AMYL ACETATE.—3s. per lb.
AMYL BUTYRATE.—6s. 6d. per lb.
AMYL SALICYLATE.—3s. per lb.
ANETHOL (M.P. 21/22° C.).—6s. per lb.
BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.—2s. 4d. per lb.
BENZYL ALCOHOL FREE FROM CHLORINE.—2s. 4d. per lb.
BENZALDEHYDE FREE FROM CHLORINE.—2s. 9d. per lb.
BENZYL BENZOATE.—2s. 9d. per lb.
CINNAMIC ALDEHYDE NATURAL.—16s. 9d. per lb.
COUMARIN.—11s. 9d. per lb.
CITRONELLOL.—16s. per lb.
CITRAL.—9s. 6d. per lb.
ETHYL CINNAMATE.—9s. per lb.
ETHYL PHTHALATE.—3s. per lb.
EUGENOL.—10s. per lb.
GERANIOL (PALMAROSA).—22s. 6d. per lb.
GERANIOL.—8s. to 16s. per lb.
HELIOTROPINE.—6s. 3d. per lb.
ISO EUGENOL.—14s. 6d. per lb.
LINALOL EX BOIS DE ROSE.—18s. per lb.
LINALYL ACETATE.—18s. per lb.
METHYL ANTHRANILATE.—9s. 3d. per lb.
METHYL BENZOATE.—5s. per lb.
MUSK KETONE.—35s. per lb.
MUSK XYLOL.—5s. 9d. per lb.
NEROLIN.—4s. per lb.
PHENYL ETHYL ACETATE.—14s. per lb.
PHENYL ETHYL ALCOHOL.—11s. 6d. per lb.
RHODINOL.—36s. 6d. per lb.
SAFROL.—1s. 4d. per lb.
TERPINEOL.—1s. 6d. per lb.
VANILLIN.—21s. 6d. to 23s. 6d. per lb. Good demand.

Essential Oils

ALMOND OIL.—12s. 6d. per lb.
ANISE OIL.—3s. 9d. per lb.
BERGAMOT OIL.—28s. per lb.
BOURBON GERANIUM OIL.—13s. 3d. per lb.
CAMPHOR OIL.—60s. per cwt.
CANANGA OIL, JAVA.—11s. 3d. per lb.
CINNAMON OIL, LEAF.—5d. per oz.
CASSIA OIL, 80/85%.—11s. per lb.
CITRONELLA OIL.—Java, 85/90%, 3s. 6d. Ceylon, 2s. 4d. per lb.
CLOVE OIL.—7s. 3d. per lb.
EUCALYPTUS OIL, 70/75%.—1s. 10d. per lb.
LAVENDER OIL.—French 38/40%, Esters, 25s. 6d. per lb.
LEMON OIL.—7s. 6d. per lb.
LEMONGRASS OIL.—4s. 9d. per lb.
ORANGE OIL, SWEET.—11s. 3d. per lb.
OTTO OF ROSE OIL.—Bulgarian, 60s. per oz. Anatolian, 35s. per oz.
PALMA ROSA OIL.—13s. 6d. per lb.
PEPPERMINT OIL.—Wayne County, 125s. per lb. Japanese, 23s. 7d. per lb.
PETITGRAIN OIL.—9d. per lb.
SANDAL WOOD OIL.—Mysore, 26s. per lb. Australian, 18s. 6d. per lb.

London Chemical Market

The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.

London, January 1, 1926.

THERE is little of interest to report as the markets have practically closed owing to the holidays. After the turn of the year, however, business may be expected to be renewed, and the prospects for next year are better than we have seen for some considerable time. Export trade is without feature.

General Chemicals

ACETONE is a firm and active market at £80 to £83 per ton ex wharf. ACID ACETIC is in fair demand, prices unchanged. ACID FORMIC is firm and a better business is reported. Price is £50 to £51 per ton. ACID LACTIC is very quiet, but the price is firm at £43 per ton for 50% by weight. ACID OXALIC is firm at 3½d. per lb. to 3¾d. per lb. ACID TARTARIC.—The market is dominated by secondhand sellers asking from 11½d. to 11¾d. per lb. ALUMINA SULPHATE is in good demand at £5 10s. to £5 15s. per ton for 17-18%. AMMONIUM CHLORIDE remains a very weak market, nominal price £18 10s. to £19 per ton, which can be shaded for quantities. ARSENIC.—Prices nominally unchanged in the absence of demand. BARIUM CHLORIDE is very firm at £9 15s. to £10 per ton. BLEACHING POWDER is unchanged. CREAM OF TARTAR.—Supplies for spot and early delivery are very scarce. The market has advanced to £76 per ton. EPSOM SALTS are very firm at £5 15s. per ton. FORMALDEHYDE.—Stocks are low, and the limited demand is satisfied at £43 to £44 per ton. LEAD ACETATE is quiet at £44 to £45 per ton for white, and about £2 per ton less for brown.

LIME ACETATE is firm at £18 per ton. LITHOPONE is unchanged at £19 to £20 per ton. METHYL ACETONE is firmly active at £50 to £55 per ton. POTASSIUM CARBONATE AND CAUSTIC are unchanged. POTASSIUM CHLORATE.—There is little demand, price nominally unchanged at 4d. per lb. SODA ACETATE is higher in price at £19 10s. per ton. Supplies are scarce. SODA BICHRIMATE.—The English makers' prices are unchanged at 3½d. per lb. SODA NITRITE is in fair demand at £22 10s. per ton. SODA PRUSSATE is very firm at about 4½d. per lb. SODA SULPHIDE is weak and uninteresting. ZINC SULPHATE is unchanged.

Coal Tar Products

The market generally maintains a firm tone. 90% BENZOL is steady at 1s. 10d. per gallon on rails. PURE BENZOL is worth from 2s. to 2s. 1d. per gallon on rails. CREOSOTE OIL is firm at 6½d. to 6¾d. per gallon on rails in the North, while the price in London remains at 7½d. per gallon. CRESYLIC ACID is quite firm at 1s. 10d. to 1s. 11d. per gallon on rails for the pale quality 97/99%, while the dark quality 95/97% is worth from 1s. 5d. to 1s. 6d. per gallon. SOLVENT NAPHTHA is unchanged at 1s. 5d. per gallon on rails. HEAVY NAPHTHA has been in rather better demand in the last few days, and is firm at 1s. 2d. per gallon on rails. NAPHTHALENES are unchanged, the lower grades being worth from £4 to £4 10s. per ton, the 76/78 quality about £6 per ton, and the 74/76 quality about £5 10s. per ton. PITCH remains firm with good demand, and prices are well maintained at 55s. to 57s. 6d. per ton f.o.b. U.K. ports.

Manchester Chemical Market

(FROM OUR OWN CORRESPONDENT.)

Manchester, January 1, 1926.

BUSINESS in chemicals since the beginning of last week has been distinctly flat, the market obviously being influenced by the end of the year atmosphere. With most houses closing to-day for another week-end traders will not get into their stride again until next week, and even then it will take several days for things to settle down. Values remain fairly steady and not much changed since last report, although in the absence of serious business there has not been a great deal of opportunity to test them.

Bleaching powder is still offering at round £9 per ton and alkali at its recent level of £6 15s., interest in both being moderate. Caustic soda values are maintained at from £15 12s. 6d. per ton for 60 per cent. material to £18 for 76-77 per cent. Hyposulphite of soda is quiet but steady at £14 5s. per ton for photographic crystals and £9 10s. to £10 for commercial quality. Bicarbonate and phosphate of soda continue to be quoted at £10 10s. and £12 5s. per ton respectively. Both prussiate and chlorate of soda are firm at 4½d. and 3d. per lb. Acetate of soda is in restricted demand at £17 to £17 10s. per ton. Sodium sulphide is on the easy side at round £11 10s. per ton for 60-65 per cent. concentrated solid and £9 5s. for crystals. Soda crystals keep steady at £5 5s. per ton. Bichromate of soda is quiet and easier at 3½d. per lb.

Both caustic potash and carbonate of potash are keeping up at round £28 10s. and £25 10s. to £26 per ton respectively. Permanganate of potash is offered at about 7½d. per lb. for pharmaceutical quality and 5½d. to 6d. for commercial material. Chlorate of potash is still quoted at 4d. to 4½d. per lb. and yellow prussiate at 7½d. Bichromate of potash is easy at about 4½d. per lb.

Arsenic remains a dull section at round £14 10s. per ton on rails for white powdered, Cornish makes. Sulphate of copper is quiet but steady at £24 to £24 10s. Grey acetate of lime is firm at £16 10s. per ton, with brown quoted at about £7 10s. Acetate of lead is on offer at £44 to £45 for white and £39 to £40 per ton for brown.

The acids generally are rather quiet. Oxalic acid is steady at 3½d. per lb. Citric and tartaric acids are unchanged at about 1s. 3½d. and 11½d. per lb. respectively. Acetic acid is maintained at £37 to £38 per ton for 80 per cent. commercial quality and round £66 for glacial.

Latest Oil Prices

LONDON.—LINSEED OIL quiet and 2s. 6d. to 5s. lower. Spot, £34; December, £32 12s. 6d.; January-April and May-August, £32 15s.; September-December, £32 12s. 6d. RAPE OIL quiet. Crude crushed spot, £48 10s.; technical refined, £51 10s. COTTON

OIL, steady. Refined common edible, £43; Egyptian, crude, £36 10s.; deodorised, £45. TURPENTINE inactive at 1s. per cwt. decline. American, spot, 66s.; and January-April, 67s.

HULL.—LINSEED OIL.—Naked, spot, £33 15s.; December, £33 10s.; January-April, £33 5s.; May-August, £32 17s. 6d. COTTON OIL.—Naked, Bombay crude, £34; Egyptian crude, £35; edible refined, £38 15s.; technical, £37 15s. PALM KERNEL OIL.—Crushed naked, 5½ per cent., £43. GROUNDNUT OIL.—Crushed and extracted, £43; deodorised, £47. SOYA OIL.—Extracted and crushed, £40 10s.; deodorised, £44. RAPE OIL.—Extracted and crushed, £47 10s. per ton, net cash terms, ex mill. CASTOR OIL and COD OIL, unaltered.

Nitrogen Products Market

Export.—Transactions since our last issue have been very small on account of the holiday season, and inquiries have been few. The demand from the Continent is still quiet and the producers are holding firm at £12 5s. f.o.b. U.K. port in single bags. Very little business has resulted. It seems that the longer the demand is delayed a greater rush there will be for sulphate when the agricultural demand sets in.

Home.—The home trade has been comparatively quiet. The difference in price between January and December delivery is not sufficiently large to cause considerable buying. Forward bookings continue to be made for delivery up to May.

Nitrate of Soda.—The nitrate market continues quiet with £11 5s. c.i.f. chief European port as the basis price, around which there are small fluctuations. It is expected that the price will rise steadily as the consuming season advances.

American Market Movements

(From Drug and Chemical Markets.)

IMPORTED barium chloride higher at \$62.00 ton on spot. Copper sulphate remains easy. Contract closing continue to occupy time of industrial chemical producers.

Pure benzene very easy with shading of quotations reported. Large producers of motor benzene are separating pure products. Conflicting reports on toluene and xylene. Tyridine and phenol quiet. Intermediate makers quote unchanged prices on entire list.

Trading in fine chemicals has fallen off somewhat in a general way, but the market shows no weakness. Menthol continues to decline, bromides are easy, acids quiet. Quicksilver is firm, glycerine continues strong.

Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.

GLASGOW, January 1, 1926.

Owing to the English holiday there has been little movement in the Heavy Chemical market during the past week, and with the Scottish holiday just beginning there is not much prospect of business for the next week or so.

Quoted prices remain fairly steady.

Industrial Chemicals

ACID ACETIC, 98/100%.—In usual steady demand. Quoted £55 to £67 per ton according to quality and packing, c.i.f. U.K. port; 80% pure, £40 to £41 per ton; 80% technical, £38 to £39 per ton, packed in casks, c.i.f. U.K. ports.

ACID BORIC.—Crystals, granulated, or small flaked, £40 per ton; powdered, £42 per ton, packed in bags, carriage paid U.K. stations.

ACID CARBOLIC, ICE CRYSTALS.—Still in poor demand and quoted price lower at about 4½d. per lb., delivered or f.o.b. U.K. port.

ACID CITRIC, B.P. CRYSTALS.—Unchanged at about 1s. 3½d. per lb., less 5% ex. wharf, in moderate demand.

ACID FORMIC 85%.—Now quoted £49 per ton, ex wharf, early delivery.

ACID HYDROCHLORIC.—In little demand. Price 6s. 6d. per carboy, ex works.

ACID NITRIC 80%.—Remains unchanged at £23 5s. per ton, ex station, full truck loads.

ACID OXALIC 98/100%.—Spot material quoted 3½d. per lb., ex wharf. Could be obtained slightly cheaper for prompt shipment from the Continent.

ACID SULPHURIC.—144°, £3 12 6d. per ton; 168°, £7 per ton, ex works, full truck loads. Dearsenicated quality, 20s. per ton more.

ACID TARTARIC, B.P. CRYSTALS.—In poor demand. Price nominally 11½d. per lb., less 5% ex wharf.

ALUMINA SULPHATE, 17/18% IRON FREE.—On offer from the Continent at about £5 10s. per ton, c.i.f. U.K. ports. Spot material available at £6 5s. per ton, ex store.

ALUM, LUMP POTASH.—Quoted £8 per ton, c.i.f. U.K. ports. Prompt shipment from the Continent. Spot material available at about £9 5s. per ton, ex store. Powdered quality on offer from the Continent at about £7 10s. per ton, c.i.f. U.K. ports.

AMMONIA ANHYDROUS.—In moderate demand and price unchanged at 1s. 4½d. per lb., less 5% ex station. Containers extra and returnable.

AMMONIA CARBONATE.—Lump, £37 per ton; powdered, £39 per ton, packed in 5-cwt. casks, delivered U.K. ports.

AMMONIA LIQUID 880°.—In usual steady demand and price unchanged at 2½d. to 3d. per lb., delivered according to quantity.

AMMONIA MURIATE.—Grey galvanisers' crystals of British manufacture, quoted £26 to £27 per ton, ex station. On offer from the Continent at about £22 10s. per ton, c.i.f. U.K. ports. Fine white crystals quoted £18 15s. per ton, c.i.f. U.K. ports, prompt shipment from the Continent.

ARSENIC REFINED WHITE CORNISH.—Price remains unchanged at about £17 15s. per ton, ex wharf. Prompt despatch from works. Spot material quoted £19 per ton, ex store.

BARIUM CHLORIDE.—Large white crystals quoted £9 per ton, ex store, spot delivery. On offer from the Continent at about £7 15s. per ton, c.i.f. U.K. ports. Fine white crystals, £7 5s. per ton, c.i.f. U.K. ports.

BLEACHING POWDER.—English material unchanged at £9 10s. per ton, ex station. Contracts 20s. per ton less. On offer from the Continent at about £7 15s. per ton, c.i.f. U.K. ports.

BARYTES.—English material unchanged at £5 5s. per ton, ex works. Continental quoted £5 per ton, c.i.f. U.K. ports.

BORAX.—Granulated, £24 10s. per ton; crystals, £25 per ton; powdered, £26 per ton, all carriage paid U.K. stations.

CALCIUM CHLORIDE.—English manufacturers' price unchanged at £5 12s. 6d. to £5 17s. 6d. per ton, carriage paid U.K. stations. Continental quoted £3 10s. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—In good demand for export. Price unchanged at about £3 7s. 6d. per ton, f.o.b. U.K. ports, packed in casks.

COPPER SULPHATE.—In good demand for export and price for English material unchanged at £24 per ton, f.o.b. U.K. ports. Continental quoted £22 per ton, ex wharf.

FORMALDEHYDE 40%.—Spot material on offer at £40 per ton, ex store. Quoted £38 per ton, c.i.f. U.K. ports, prompt shipment

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental on offer at about £3 per ton, c.i.f. U.K. ports.

LEAD, RED.—Imported material quoted £43 5s. per ton, ex store.

LEAD, WHITE.—Offered from the Continent at about £42 10s. per ton, ex wharf. Spot material available at about £43 10s. per ton, ex store.

LEAD ACETATE.—White refined crystals offered from the Continent at about £41 10s. per ton, c.i.f. U.K. ports. Spot material quoted £44 10s. per ton, ex store.

MAGNESITE, GROUND CALCINED.—In moderate demand and price unchanged at about £8 15s. per ton, ex station.

POTASH CAUSTIC 88/92%.—Syndicate prices vary from £25 10s. to £28 15s. per ton, c.i.f. U.K. ports, according to quantity and destination. Spot material available at about £29 per ton, ex store.

POTASSIUM BICHROMATE.—Unchanged at 4½d. per lb., delivered.

POTASSIUM CARBONATE.—96/98% quoted £25 10s. per ton, c.i.f. U.K. ports. Prompt shipment from the Continent. Spot material available at about £27 per ton, ex store.

POTASSIUM CHLORATE.—In good demand for export. Prices for powdered about £28 10s., f.o.b. Continental ports. Crystals about £2 per ton more. Limited quantities available for shipment to the U.K. of powdered quality at about £29 10s. per ton, c.i.f. U.K. ports.

POTASSIUM NITRATE, SALTPETRE.—Quoted £24 5s. per ton, c.i.f. U.K. ports. Prompt shipment. Spot material available at about £26 15s. per ton, ex store.

POTASSIUM PERMANGANATE, B.P. CRYSTALS. Spot material quoted 8d. per lb., ex store. Offered for early delivery at 7½d. per lb., ex wharf.

POTASSIUM PRUSSIAN, YELLOW.—In good demand and price unchanged at about 7½d. per lb., ex store. Offered for prompt shipment from the Continent at about 7½d. per lb., ex wharf.

SODA CAUSTIC.—76/77%, £17 10s. per ton; 70/72%, £16 2s. 6d. per ton; broken 60%, £16 12s. 6d. per ton; powdered 98/99%, £20 17s. 6d. per ton; all carriage paid, U.K. stations, spot delivery. Contracts 20s. per ton less.

SODIUM ACETATE.—On offer at about £18 5s. per ton, ex store, spot delivery. Quoted £17 15s. per ton, c.i.f. U.K. ports, prompt shipment.

SODIUM BICARBONATE.—Refined recrystallised quality, £10 10s. per ton, ex quay or station. M.W. quality 30s. per ton less.

SODIUM BICHROMATE.—English price unchanged at 3½d. per lb., delivered.

SODIUM CARBONATE.—Soda crystals, £5 to £5 5s. per ton, ex quay or station; powdered or pea quality, £1 7s. 6d. per ton more; alkali 58%, £8 12s. 3d. per ton, ex quay or station.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £9 per ton, ex station. Minimum 4-ton lots. Pea crystals, £14 per ton, ex station. Continental commercial quality offered at £9 per ton, ex store.

SODIUM NITRATE.—Quoted £13 per ton, ex store. 95/98% refined quality 7s. 6d. per ton extra.

SODIUM NITRITE, 100%.—Quoted £24 per ton, ex store. Offered from the Continent about £22 5s. per ton, c.i.f. U.K. ports.

SODIUM PRUSSIAN, YELLOW.—Still in good demand. Quoted 4½d. per lb., ex store. On offer from the Continent at a fraction less.

SODIUM SULPHATE, SALTCAKE.—Price for home consumption, £3 10s. per ton, f.o.r. works. Good inquiry for export and higher prices obtainable.

SODIUM SULPHIDE.—60/65% solid, £13 5s. per ton; broken, £14 5s. per ton; flake, £15 5s. per ton; crystals, 31/34%, £8 12s. 6d. per ton. All delivered buyers' works U.K., minimum 5-ton lots, with slight reduction for contracts. 60/62% solid quality offered from the Continent at about £10 10s. per ton, c.i.f. U.K. ports; broken £1 per ton more; crystals 30/32%, £7 10s. per ton, c.i.f. U.K. ports.

SULPHUR.—Flowers, £10 10s.; roll, £9 10s.; rock, £9 7s. 6d.; ground, £9 5s.; per ton, ex store, spot delivery. Prices nominal.

ZINC CHLORIDE.—British material 96/98% quoted about £24 per ton, f.o.b. U.K. ports; 98/100% solid on offer from the Continent at about £22 10s. per ton, c.i.f. U.K. ports. Powdered about 20s. per ton extra.

ZINC SULPHATE.—Of Continental manufacture on offer at about £11 per ton, ex wharf.

NOTE.—The above prices are for bulk business, and are not to be taken as applicable to small parcels.

Company News

BOOTS PURE DRUG CO.—The directors propose to increase the capital to £2,900,000 by the creation of 500,000 ordinary shares of £1 each, ranking *pari passu* with the existing ordinary shares. They also propose that £500,000, being part of the reserve fund, be capitalised and distributed as a special capital bonus, free of income tax, among shareholders who were registered on December 28, 1925, at the rate of one fully-paid ordinary share for every two existing ordinary shares held.

YORKSHIRE DYEWARE AND CHEMICAL CO.—An interim dividend of 5 per cent. per annum, less tax, payable on January 1, is announced.

CHAMPION AND SLEE.—The net profits for the year ended September 30 amounted to £15,172, and £3,725 was brought forward. A dividend of 10 per cent. is recommended on the ordinary shares, placing £5,000 to the reserve and carrying forward £2,448.

ALLEN-LIVERSIDGE, LTD.—An interim dividend, payable on January 18, on account of the six months ended October 31 last, at the rate of 10 per cent. per annum, less tax, is announced.

Sulphide Corporation Meeting

Superphosphate Developments

THE Earl of Kintore, presiding at the annual general meeting of the Sulphide Corporation, Ltd., in London, on Tuesday, December 22, said that the fact that a dividend was recommended showed an improvement in the Corporation's affairs. At Broken Hill the outstanding feature had been the struggle with the mine fire, but they were now raising nearly 1,000 tons of ore a week. They were now treating all ore and slimes at their own mill. At Cockle Creek the past year had seen progress in the manufacture and sale of both sulphuric acid and superphosphates, and had also seen the completion of the first unit of the cement plant. The sulphuric acid production had been materially larger than in the preceding year, and had amounted to 15,822 tons. They had disposed of 7,300 tons by direct sales of acid, and had utilised the balance in the manufacture of superphosphates. The production and sales of superphosphates had been considerably higher. Their plant was capable of producing over 40,000 tons a year.

The cement plant at Cockle Creek had started production, and the whole of the output of high-grade cement to the end of the financial year had been already disposed of, while advices regarding future sales were so encouraging that they had decided forthwith to double the plant. They hoped soon to see their production at Cockle Creek raised to at least 60,000 tons of cement and 40,000 tons of superphosphate per annum, together with a substantial quantity of acid for direct sale.

English Sulphuric Acid Production

At the company's English works, at Seaton Carew, near Hartlepool, where they carried on an important zinc distilling and sulphuric acid making business, the past year had been one of satisfactory progress. At the beginning of the year they had seven distilling furnaces in operation, the average number in commission over the whole year had been rather more than eight. The output figures for the year were the highest yet attained in any year since 1908, and had it not been for the fact that the supplies of zinc concentrates which they received from the Board of Trade under contracts running on to 1930 had been restricted by reason of the lessened output of this material at Broken Hill, the increase in production would have been still larger. They had now at Seaton 16 distilling furnaces.

Lead Poisoning from Paint

LEAD paint never enters the system directly through the pores of the skin, but it can, of course, collect on the hands and under the finger nails and be eaten by very careless painters. Incidentally, it may be said, evidence is lacking that breathing in dust from dry rubbing down zinc paints is hurtful. A painter can help himself to keep fit. He should pay scrupulous attention to keeping his hands and teeth clean. Too much stress cannot be laid on the part played by bad teeth in lowering the health. Overall suits should never be shaken to rid them of dust, as this causes more dust in the air breathed; they require washing at least once a week.

New Chemical Trade Marks

Applications for Registration

This list has been specially compiled for us by Mr. H. T. P. Gee, Patent and Trade Mark Agent, Staple House, 51 and 52, Chancery Lane, London, W.C.2, from whom further information may be obtained, and to whom we have arranged to refer any inquiries relating to Patents, Trade Marks and Designs.

Opposition to the Registration of the following Trade Marks can be lodged up to January 16.

"FRUTILIZA."

463,633. For a fertilising preparation. Class 2. De Pass Fertilisers, Limited, Barking Guano Works, Creekmouth, Barking, Essex; manufacturers. October 27, 1925.

"FORMAZONE."

457,197. For dyes for textile fabrics and leather. Class 4. Jesse Tatum, trading as The Radnor Color and Chemical Co., 99, Bland Street, Manchester; chemical merchant. March 16, 1925.

Chemical Trade Inquiries

The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

TAR.—Tenders are invited as follows:—10,000 galls, road tar to R.B. specification, 12,000 galls. proprietary tar for Dover Town Council. Forms from Mr. W. B. Smith, borough engineer, to be returned by January 19th. For 60,000 galls. of dehydrated tar (No. 1 specification) for Gravesend Town Council. Tenders to Town Clerk, 4, Woodville Terrace, by January 14th. For 60,000 galls. of refined tar for Worthing Corporation. Forms from Borough Surveyor, to be returned by January 9th.

INDUSTRIAL GAS OVENS.—A Warsaw firm desires to get into touch with British manufacturers not yet represented in Poland, of gas ovens for general industrial, ceramic, chemical, and metallurgical purposes, and accessories and fittings. (Reference No. 757.)

OILS AND PAINTS.—A Turkish commission agent in Smyrna desires to represent British firms exporting crude and refined oils and paints. (Reference No. 762.)

FERTILISERS.—A Greek firm of commission agents in Athens desires to represent British exporters of fertilisers and fish glue. (Reference No. 751.)

DISINFECTANTS.—A firm in Buenos Aires wishes to represent British manufacturers of sheep dip and high-class disinfectants. (Reference No. 766.)

Ammonia as a Fertiliser

At a recent meeting of the American Electrochemical Society held at Chattanooga, Penn., Mr. William G. Allan, engineering representative of Liquid Air, Ltd., London, presented a paper on "Hydrogen and By-Product Oxygen in Relation to Nitrogen Fixation and Fertilisers," in which the advantage of ammonia over other fixed nitrogen products was pointed out. The importance of pure hydrogen for the synthesis of ammonia was emphasised, and it was shown that electrolytic hydrogen was preferable to hydrogen produced by either the iron contact or the water gas process. A very exhaustive research was undertaken to devise an electrolytic cell for the production of hydrogen. Many of the experiments were carried out on a large commercial scale, and on the basis of results obtained a new cell was designed. The electrodes were made of wire cloth and the diaphragm consisted of high-grade asbestos cloth. The purity of the hydrogen produced was 99.95, and that of the oxygen 99.8 per cent. Cost data were included for the production of hydrogen, ammonia, and ammonium sulphate, and comparisons were made with costs for the same products by competing processes. Pure oxygen as a by-product was briefly dealt with, and the lecturer said that there were ever-increasing uses for oxygen in metallurgy and in industrial chemistry.

In a discussion, the possibility of using off-peak power for electrolytic hydrogen was considered.

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

County Court Judgment

[NOTE.—The publication of extracts from the "Registry of County Court Judgments" does not imply inability to pay on the part of the persons named. Many of the judgments may have been settled between the parties or paid. Registered judgments are not necessarily for debts. They may be for damages or otherwise, and the result of bona-fide contested actions. But the Registry makes no distinction of the cases. Judgments are not returned to the Registry if satisfied in the Court books within twenty-one days. When a debtor has made arrangements with his creditors we do not report subsequent County Court judgments against him.]

■ **LOW TEMPERATURE CARBONISATION, LTD.**, 14 and 15, Cockspur Street, S.W., coal distillers. (C.C., 2/1/26.) £28 ss. 10d. November 13.

Receivership

DISINFECTANTS AND GENERAL PRODUCTS, LTD. (R., 2/1/26.) G. Gradon, of 43, Gower Street, W.C.1, was appointed receiver and manager on December 12, 1925, under powers contained in debenture dated September 15, 1924.

Mortgages and Charges

[NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.]

ELLIMAN, SONS AND CO., LTD., Slough, embrocation manufacturers. (M., 2/1/26.) Registered December 15, £12,000 mortgage, to Mrs. E. J. Lowater, Dursley, St. Anthony's Road, Bournemouth, and another; charged on property at Slough.

■ **HAMILTON (EMMA), LTD.**, London, W., specialists in complexion treatment. (M., 2/1/26.) Registered December 9, £3,000 debentures, to J. D. B. Green, 8, Melrose Avenue, Cricklewood; general charge.

MATTHEWS (STEPHEN) AND CO., LTD., London, E.C., manufacturing chemists. (M., 2/1/26.) Registered December 8, £2,000 debentures, to R. V. Oelrichs, 19, Collingham Road, London; general charge. *— July 5, 1923.

MILTON PROPRIETARY, LTD., London, E.C., chemical manufacturers. (M., 2/1/26.) Registered December 14, £30,000 debentures (secured by trust deed dated December 9, 1925), present issue £10,000; charged on 124 and 125, Bunhill Row, E.C., and part of 2, Pembroke Street, Islington, etc., also general charge. *Nil. December 31, 1924.

PRECIOUS (HAROLD), LTD., Bradford, dyers and cleaners. (M., 2/1/26.) Registered December 12, £438 mortgage of equity, to J. R. Dennison, Ling Holme, Heaton, Bradford, dyer; charged on 297, Legrams Lane, Bradford. *£1,520. February 25, 1925.

SOUTH AFRICAN CARBIDE AND BY-PRODUCTS CO., LTD., London, S.W. (M., 2/1/26.) Registered December 18, £325 debentures, part of £29,640; charged on property comprised in trust deed dated April 7, 1922. *£77,315. May 18, 1925.

London Gazette, &c.

Companies Winding Up Voluntarily

CAPSOL PRODUCTS, LTD. (C.W.U.V., 2/1/26.) L. Aspinall, incorporated accountant, 32, Talbot Road, Blackpool, appointed liquidator, December 21. Meeting of creditors at liquidator's office on Thursday, January 7, at 12 noon.

DISINFECTANTS AND GENERAL PRODUCTS, LTD. (C.W.U.V., 2/1/26.) George Gradon, F.S.A.A., appointed liquidator. Meeting of creditors at the liquidator's office, 43, Gower Street, Bedford Square, W.C.1, on January 8, at 12 noon.

THYLENE, LTD. (C.W.U.V., 2/1/26.) Wm. Howarth, Commercial Street, Halifax, chartered accountant, appointed liquidator, December 16. Meeting of creditors at the office of liquidator on Tuesday, January 5, at 3 p.m.

WAIPUNA KAURI GUM CO., LTD. (C.W.U.V., 2/1/26.) By special resolution November 30, confirmed December 16, M. Lancaster, of Thorne, Lancaster, Farey and Reacher, 46, Basinghall Street, London, appointed liquidator.

Notice of Dividend

BOWEN, Evan Morgan, Penhydd, Blundell Avenue, Porthcawl, Glamorgan, chemical engineer. First and final dividend, 2½d. per £, payable December 30, Official Receiver's Office, 34, Park Place, Cardiff.

New Companies Registered

BOWRING, HARDY AND CO., LTD., Palmerston House, Bishopsgate, London, E.C. Registered December 28. Colliery proprietors, coke and by-product manufacturers, winners of mineral and metallic substances, manufacturers of chemicals and manures, dealers in petroleum and other mineral oils. Nominal capital, £200,000, in 100,000 preference and 100,000 shares of £1 each.

W. T. BRUCE AND CO., LTD., 3, Lombard Court, London, E.C.3. Registered December 23. Chemists, druggists, drysalers, oil and colourmen, etc. Nominal capital, £2,000, in £1 shares.

WATERPROOFERS (MORETON'S PROCESS), LTD., 84, Kingsway, London, W.C.2. Registered December 28. Waterproofers of textiles, etc., and dealers in all such things, solutions or chemicals used in connection therewith, etc. Nominal capital, £2,000, in rs. shares.

J. M. MILLS, LTD. Registered December 23. Chemists, druggists, oil and colourmen, manufacturers of and dealers in chemical, industrial and other preparations, etc. Nominal capital, £60,000, in £1 shares. Solicitors: Brooks and Baker, 1, Park Street, Market Place, Stockport.

SOUTHERN MINERAL OIL PRODUCTS, LTD., 25, Eden Quay, Dublin. Registered December 14. Dealers in, refiners and distributors of petroleum, naphtha, etc. Nominal capital, £1,500 in £1 shares.

Tariff Changes

GERMANY.—By reason of the most-favoured nation provisions, certain alterations in Tariff rates as the result of a treaty with Italy, are also applicable to U.K. goods exported to Germany. The following are the new rates in the Chemicals, etc., section:—

Articles.	Reichsmarks per 100 kilogs.	
	Former Rate.	Revised Rate (under Treaty).
Boric acid and borax (borate of soda)	5	3
Citric acid	20	10
Volatile (essential) oils	30	20
Matches of stearine, wax, etc.	60	50
Tanning extracts, not elsewhere mentioned:		
Liquid	4	2
Solid	8	4

By reason of a Swiss treaty the following rates are also applicable to U.K. goods:—

Carbide of calcium	5	4.25
Ferrosilicon containing:		
More than 50 per cent. and up to 80 per cent. of silicon	3	2
More than 80 per cent. of silicon	3	1

PORTUGAL.—It is proposed to increase the duty on creolins and lysol from 1.4 to 3 cts. per kilog.; calcium superphosphates, hitherto duty free, are to be taxed at 1½ escudos per metric ton. New headings are to be raised for enamel for glazing china or metals (duty 2 cts. per kilog.); denatured alcohol under 90 degrees (2 cts. per kilog.); radium salts (1 per cent. *ad valorem*). The rates of duty quoted are those of the "Minimum" Tariff.

